

# REFERENCES

## EXECUTIVE SUMMARY

### REFERENCES

- IPCC**, 2000: *Land Use, Land-use Change and Forestry. A Special Report of the Intergovernmental Panel on Climate Change* [Watson, R.T., I.R. Noble, B. Bolin, N.H. Ravindranath, D.J. Verardo, and D.J. Dokken (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 388 pp.
- IPCC**, 2001: *Climate Change 2001: The Scientific Basis*. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change [Houghton, J.T., Y. Ding, D.J. Griggs, M. Noguer, P.J. van der Linden, X. Dai, K. Maskell, and C.A. Johnson (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 881 pp.
- IPCC**, 2007: Summary for Policymakers. In: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
- Marland**, G., T.A. Boden, and R.J. Andres, 2006: Global, regional, and national fossil fuel CO<sub>2</sub> emissions. In: *Trends: A Compendium of Data on Global Change*. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, TN. Available at <http://cdiac.esd.ornl.gov/trends/trends.htm>
- CHAPTER I REFERENCES**
- Caldeira**, K. and M.E. Wickett, 2003: Anthropogenic carbon and ocean pH. *Nature*, **425(6956)**, 365–366.
- Caldeira**, K., M.G. Morgan, D. Baldochi, P.G. Brewer, C.-T.A. Chen, G.-J. Nabuurs, N. Nakicenovic, and G.P. Robertson, 2004: A portfolio of carbon management options. In: *The Global Carbon Cycle: Integrating Humans, Climate, and the Natural World* [Field, C.B. and M.R. Raupach (eds.)]. Island Press, Washington, DC, pp. 103–129.
- Canadell**, J.G., D. Pataki, R. Gifford, R.A. Houghton, Y. Lou, M.R. Raupach, P. Smith, and W. Steffen, 2007: Saturation of the terrestrial carbon sink. In: *Terrestrial Ecosystems in a Changing World*, [Canadell, J.G., D. Pataki, and L. Pitelka (eds.)]. The IGBP Series. Springer-Verlag, Berlin Heidelberg, pp. 59–78.
- Cash**, D. and W. Clark, 2001: *From Science to Policy: Assessing the Assessment Process*. Faculty Research Working Paper 01-045, Kennedy School of Govern-
- ment, Harvard University, Cambridge, MA. Available at <http://ksgnotes1.harvard.edu/Research/wpaper.nsf/RWP/RWP01-045>
- Cash**, D., W. Clark, F. Alcock, N. Dickson, N. Eckley, D. Gusston, J. Jäger, and R. Mitchell, 2003: Knowledge systems for sustainable development. *Proceedings of the National Academy of Sciences*, **100(14)**, 8086–8091.
- Casperson**, J.P., S.W. Pacala, J.C. Jenkins, G.C. Hurtt, P.R. Moorcroft, and R.A. Birdsey, 2000: Contributions of land-use history to carbon accumulation in U.S. Forests. *Science*, **290(5494)**, 1148–1151.
- CCSP** (U.S. Climate Change Science Program), 2003: *Strategic Plan for the U.S. Climate Change Science Program*. A Report by the Climate Change Science Program and the Subcommittee on Global Change Research, Climate Change Science Program Office, Washington, DC, 211 pp.
- DOE** (U.S. Department of Energy), 1997: *Technology Opportunities to Reduce Greenhouse Gas Emissions*. U.S. Department of Energy, Washington, DC, 95 pp.
- Dilling**, L., S.C. Doney, J. Edmonds, K.R. Gurney, R.C. Harriss, D. Schimel, B. Stephens, and G. Stokes, 2003: The role of carbon cycle observations and knowledge in carbon management. *Annual Review of Environment and Resources*, **28**, 521–558.
- Ehhalt**, D., M. Prather, F. Dentener, E. Dlugokencky, E. Holland, I. Isaksen, J. Katima, V. Kirchhoff, P. Matson, P. Midgley, and M. Wang, 2001: Atmospheric chemistry and greenhouse gases. In: *Climate Change 2001: The Scientific Basis*. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change [Houghton, J.T., Y. Ding, D.J. Griggs, M. Noguer, P.J. van der Linden, X. Dai, K. Maskell, and C.A. Johnson (eds.)]. Cambridge University Press, Cambridge, United Kingdom, pp. 239–287.
- EIA** (Energy Information Administration), 2005: *Historical Data Overview*. U.S. Department of Energy. Available at [http://www.eia.doe.gov/overview\\_hd.html](http://www.eia.doe.gov/overview_hd.html); <http://cdiac.ornl.gov/ftp/trends/emis/meth-reg.htm>
- Fan**, S., M. Gloor, J. Mahlman, S. Pacala, J. Sarmiento, T. Takahashi, and P. Tans, 1998: A large terrestrial carbon sink in North America implied by atmospheric and oceanic carbon dioxide data and models. *Science*, **282(5388)**, 442–446.
- Foley**, J.A. and N. Ramankutty, 2004: A primer on the terrestrial carbon cycle: hat we don't know but should. In: *The Global Carbon Cycle: Integrating Humans, Climate and the Natural World*. [Field, C.B. and M.R. Raupach, (eds.)] Island Press, Washington DC, pp. 279–294.
- Friedlingstein**, P., P. Cox, R. Betts, L. Bopp, W. von Bloh, V. Brovkin, P. Cadule, S. Doney, M. Eby, I. Fung, G. Bala, J. John, C. Jones, F. Joos, T. Kato, M. Kawamiya, W. Knorr,

- K. Lindsay, H.D. Matthews, T. Raddatz, P. Rayner, C. Reick, E. Roeckner, K.-G. Schnitzler, R. Schnur, K. Strassmann, A.J. Weaver, C. Yoshikawa, and N. Zeng, 2006: Climate-carbon cycle feedback analysis: results from the C4MIP model inter-comparison. *Journal of Climate*, **19(14)**, 3337-3353.
- Goodale**, C.L., M.J. Apps, R.A. Birdsey, C.B. Field, L.S. Heith, R.A. Houghton, J.C. Jenkins, G.H. Kholmaier, W. Kurz, S. Liu, G.-J. Nabuurs, S. Nilsson, and A.Z. Shvidenko, 2002: Forest carbon sinks in the Northern Hemisphere. *Ecological Applications*, **12(3)**, 891-899.
- Greenblatt**, J.B. and J.L. Sarmiento, 2004: Variability and climate feedback mechanisms in ocean uptake of CO<sub>2</sub>. In: *The Global Carbon Cycle: Integrating Humans, Climate, and the Natural World* [Field, C.B. and M.R. Raupach (eds.)]. Island Press, Washington, DC, pp. 257-275.
- Gurney**, K.R., R.M. Law, A.S. Denning, P.J. Rayner, D. Baker, P. Bousquet, L. Bruhwiler, Y.-H. Chen, P. Ciais, S. Fan, I.Y. Fung, M. Gloo, M. Heimann, K. Higuchi, J. John, T. Maki, S. Maksyutov, K. Masarie, P. Peylin, M. Prather, B.C. Pak, J. Randerson, J. Sarmiento, S. Taguchi, T. Takahashi, and C.-W. Yue, 2002: Towards robust regional estimates of CO<sub>2</sub> sources and sinks using atmospheric transport models. *Nature*, **415(6872)**, 626-630.
- Hoffert**, M.I., K. Caldeira, G. Benford, D.R. Criswell, C. Green, H. Herzog, A.K. Jain, H.S. Kheshgi, K.S. Lackner, J.S. Lewis, H.D. Lightfoot, W. Manheimer, J.C. Mankins, M.E. Mael, L.J. Perkins, M.E. Schlesinger, T. Volk, and T.M.L. Wigley, 2002: Advanced technology paths to global climate stability: energy for a greenhouse planet. *Science*, **298(5595)**, 981-987.
- Houghton**, R.A., J.L. Hackler, and K.T. Lawrence, 1999: The U.S. carbon budget: contributions from land-use change. *Science*, **285(5427)**, 574-578.
- Houghton**, R.A., 2002: Magnitude, distribution and causes of terrestrial carbon sinks and some implications for policy. *Climate Policy*, **2**, 71-88.
- Houghton**, R.A., 2003: The contemporary carbon cycle. In: *Treatise on Geochemistry, Volume 8 Biogeochemistry* [Schlesinger, W.H. (ed.)]. Elsevier Ltd, New York, pp. 473-513.
- IPCC**, 2001: *Climate Change 2001: Synthesis Report*. A Contribution of Working Groups I, II, and III to the Third Assessment Report of the Intergovernmental Panel on Climate Change [Watson, R.T., and the Core Writing Team (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, 398 pp.
- Jones**, C.D., P.M. Cox, and C. Huntingford, 2006: Climate-carbon cycle feedbacks under stabilization: uncertainty and observational constraints. *Tellus B*, **58(5)**, 603-613.
- Joos**, F. and I.C. Prentice, 2004: A paleo-perspective on changes in atmospheric CO<sub>2</sub> and climate. In: *The Global Carbon Cycle: Integrating Humans, Climate, and the Natural World* [Field, C.B. and M.R. Raupach (eds.)]. Island Press, Washington, DC, pp. 165-186.
- Keeling**, C.D. and T.P. Whorf, 2005: Atmospheric CO<sub>2</sub> records from sites in the SIO air sampling network. In: *Trends: A Compendium of Data on Global Change*. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, TN. Available at <http://cdiac.esd.ornl.gov/trends/trends.htm>
- Kirschbaum**, M.U.F. and A.L. Cowie, 2004: Giving credit where credit is due: a practical method to distinguish between human and natural factors in carbon accounting. *Climatic Change*, **67(2-3)**, 417-436.
- Liu**, K.K., K. Iseki, and S.-Y. Chao, 2000: Continental margin carbon fluxes. In: *The Changing Ocean Carbon Cycle* [Hansen, R., H.W. Ducklow, and J.G. Field (eds.)]. Cambridge University Press, Cambridge, United Kingdom, pp. 187-239.
- Marland**, G., T.A. Boden, and R.J. Andres, 2003: Global, regional, and national CO<sub>2</sub> emissions. In: *Trends: A Compendium of Data on Global Change*. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, TN, USA. Available at <http://cdiac.esd.ornl.gov/trends/trends.htm>
- Marland**, G., T.A. Boden, and R.J. Andres, 2006: Global, regional, and national CO<sub>2</sub> emissions. In: *Trends: A Compendium of Data on Global Change*. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, TN, USA. Available at <http://cdiac.esd.ornl.gov/trends/trends.htm>
- Nowak**, R.S., D.S. Ellsworth, and S.D. Smith, 2004: Functional responses of plants to elevated atmospheric CO<sub>2</sub> do photosynthetic and productivity data from FACE experiments support early predictions? *New Phytologist*, **162(2)**, 253-280.
- Orr**, J.C., V.J. Fabry, O. Aumont, L. Bopp, S.C. Doney, R.A. Feely, A. Gnanadesikan, N. Gruber, A. Ishida, F. Joos, R.M. Key, K. Lindsay, E. Maier-Reimer, R. Matear, P. Monfray, A. Mouchet, R.G. Najjar, G.K. Plattner, K.B. Rodgers, C.L. Sabine, J.L. Sarmiento, R. Schlitzer, R.D. Slater, I.J. Totterdell, M.F. Weirig, Y. Yamanaka, and A. Yool, 2005: Anthropogenic ocean acidification over the twenty-first century and its impact on calcifying organisms. *Nature*, **437(7059)**, 681-686.
- Pacala**, S.W., G.C. Hurtt, D. Baker, P. Peylin, R.A. Houghton, R.A. Birdsey, L. Heath, E.T. Sundquist, R.F. Stallard, P. Ciais, P. Moorcroft, J.P. Caspersen, E. Shevliakova, B. Moore, G. Kholmaier, E. Holland, M. Gloo, M.E. Harmon, S.M. Fan, J.L. Sarmiento, C.L. Goodale, D. Schimel, and C.B. Field, 2001: Consistent land- and atmosphere-based U.S. carbon sink estimates. *Science*, **292(5525)**, 2316-2320.
- Parson**, E.A., 2003: *Protecting the Ozone Layer: Science and Strategy*. Oxford University Press, Oxford, United Kingdom, 400 pp.
- Prentice**, I.C., G.D. Farquhar, M.J.R. Fasham, M.L. Goulden, M. Heimann, V.J. Jaramillo, H.S. Kheshgi, C. Le Quéré, R.J. Scholes, and D.W.R. Wallace, 2001: The carbon cycle and atmospheric carbon dioxide. In: *Climate Change 2001: The Scientific Basis*. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change [J. T. Houghton, Y. Ding, D. J. Griggs, M. Noguer, P. J. van der Linden, X. Dai, K. Maskell, and C. A. Johnson (eds.)].

- Cambridge University Press, Cambridge, United Kingdom and New York, pp. 183-237.
- Prinn, R.G.**, 2004: Non-CO<sub>2</sub> greenhouse gases. In: *The Global Carbon Cycle: Integrating Humans, Climate, and the Natural World* [Field, C.B. and M.R. Raupach (eds.)]. Island Press, Washington, DC, pp. 205-216.
- Running, S.W., R.R. Nemani, F.A. Heinsch, M. Zhao, M. Reeves, and H. Hashimoto**, 2004: A continuous satellite-derived measure of global terrestrial primary production. *BioScience*, **54**(6), 547-560.
- Sabine, C.L., M. Heiman, P. Artaxo, D.C.E. Bakker, C.-T.A. Chen, C.B. Field, N. Gruber, C. LeQuéré, R.G. Prinn, J.E. Richey, P. Romero-Lankao, J.A. Sathaye, and R. Valentini**, 2004: Current status and past trends of the carbon cycle. In: *The Global Carbon Cycle: Integrating Humans, Climate, and the Natural World* [Field, C.B. and M.R. Raupach (eds.)]. Island Press, Washington, DC, pp. 17-44.
- Schaefer, K., A.S. Denning, N. Suits, J. Kaduk, I. Baker, S. Los, and L. Prihodko**, 2002: Effect of climate on interannual variability of terrestrial CO<sub>2</sub> fluxes. *Global Biogeochemical Cycles*, **16**, 1102, doi:10.1029/2002GB001928.
- Schimel, D.S., J. Melillo, H. Tian, A.D. McGuire, D. Kicklighter, T. Kittel, N. Rosenbloom, S. Running, P. Thornton, D. Ojima, W. Parton, R. Kelly, M. Sykes, R. Neilson, and B. Rizzo**, 2000: Contribution of increasing CO<sub>2</sub> and climate to carbon storage by ecosystems in the United States. *Science*, **287**(5460), 2004-2006.
- Sundquist, E.T. and K. Visser**, 2003: The geological history of the carbon cycle. In: *Treatise on Geochemistry, Volume 8 Biogeochemistry* [Schlesinger, W.H. (ed.)]. Elsevier Ltd, New York, pp. 425-472.
- Turner, D.P., G.J. Koerper, M.E. Harmon, and J.J. Lee**, 1995: A carbon budget for forests of the conterminous United States. *Ecological Applications*, **5**(2), 421-436.
- CHAPTER 2 REFERENCES**
- Andres, R.J., D.J. Fielding, G. Marland, T.A. Boden, N. Kumar, and A.T. Kearney**, 1999: Carbon dioxide emissions from fossil-fuel use, 1751-1950. *Tellus B*, **51**(4), 759-765.
- Archer, D., H. Kheshgi, and E. Maier-Reimer**, 1998: Dynamics of fossil fuel CO<sub>2</sub> neutralization by marine CaCO<sub>3</sub>. *Global Biogeochemical Cycles*, **12**(2), 259-276.
- Bacastow, R. and C.D. Keeling**, 1973: Atmospheric carbon dioxide and radiocarbon in the natural carbon cycle. II. Changes from A.D. 1700 to 2070 as deduced from a geochemical reservoir. In: *Carbon and the Biosphere* [Woodwell, G.M. and E.V. Pecan (eds.)]. U.S. Department of Commerce, Springfield, VA, pp. 86-135.
- Bachelet, D., R.P. Neilson, T. Hickler, R.J. Drapek, J.M. Lenihan, M.T. Sykes, B. Smith, S. Sitch, and K. Thonicke**, 2003: Simulating past and future dynamics of natural ecosystems in the United States. *Global Biogeochemical Cycles*, **17**(2), 1045, doi:10.1029/2001GB001508.
- Baker, D.F., R.M. Law, K.R. Gurney, P. Rayner, P. Peylin, A.S. Denning, P. Bousquet, L. Bruhwiler, Y.H. Chen, P. Ciais, I.Y. Fung, M. Heimann, J. John, T. Maki, S. Maksyutov, K. Masarie, M. Prather, B. Pak, S. Taguchi, and Z. Zhu**, 2006: TransCom 3 inversion intercomparison: impact of transport model errors on the interannual variability of regional CO<sub>2</sub> fluxes, 1988-2003. *Global Biogeochemical Cycles*, **20**, GB1002, doi:10.1029/2004GB002439.
- Baldocchi, D. and R. Valentini**, 2004: Geographic and temporal variation of carbon exchange by ecosystems and their sensitivity to environmental perturbations. In: *The Global Carbon Cycle: Integrating Humans, Climate, and the Natural World* [Field, C.B. and M.R. Raupach (eds.)]. Island Press, Washington, DC, pp. 295-316.
- Birdsey, R.A. and L.S. Heath**, 1995: Carbon changes in U.S. forests. In: *Productivity of America's Forests and Climate Change* [Joyce, L.A. (ed.)]. General Technical Report RM-GTR-271, U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO, pp. 56-70.
- Bousquet, P., P. Peylin, P. Ciais, C.L. Quéré, P. Friedlingstein, and P.P. Tans**, 2000: Regional changes in carbon dioxide fluxes of land and oceans since 1980. *Science*, **290**(5495), 1342-1346.
- Broecker, W.S., T.H. Peng, and T. Takahashi**, 1980: A strategy for the use of bomb-produced radiocarbon as a tracer for the transport of fossil fuel CO<sub>2</sub> into the deep-sea source regions. *Earth and Planetary Science Letters*, **49**(2), 463-468.
- Caldeira, K. and M.E. Wickett**, 2003: Anthropogenic carbon and ocean pH. *Nature*, **425**(6956), 365-366.
- Chen, J.M., W. Ju, J. Cihlar, D. Price, J. Liu, W. Chen, J. Pan, A. Black, and A. Barr**, 2003: Spatial distribution of carbon sources and sinks in Canada's forests. *Tellus B*, **55**(2), 622-641.
- Cramer, W., A. Bondeau, F.I. Woodward, I.C. Prentice, R.A. Betts, V. Brovkin, P.M. Cox, V.A. Fisher, J.A. Foley, A.D. Friend, and C. Kucharik**, 2001: Global response of terrestrial ecosystem structure and function to CO<sub>2</sub> and climate change: results from six dynamic global vegetation models. *Global Change Biology*, **7**(4), 357-373.
- Cramer, W., D.W. Kicklighter, A. Bondeau, B. Moore III, G. Churkina, B. Nemry, A. Ruimy, A.L. Schloss, J. Kaduk, and participants of the Potsdam NPP Model Intercomparison**, 1999: Comparing global models of terrestrial net primary productivity (NPP): overview and key results. *Global Change Biology*, **5**(Suppl. 1), 1-15.
- DeFries, R.S., C.B. Field, I. Fung, J. Collatz, and L. Bounoua**, 1999: Combining satellite data and biogeochemical models to estimate global effects of human-induced land cover change on carbon emissions and primary productivity. *Global Biogeochemical Cycles*, **13**(3), 803-815.
- DOE EIA** (U.S. Department of Energy, Energy Information Administration), 2006. Available at <http://www.eia.doe.gov/environment.html>
- Dukes, J.**, 2003: Burning buried sunshine: human consumption of ancient solar energy. *Climatic Change*, **61**(1-2), 31-44.

- Enting, I.G.**, 2002: *Inverse Problems in Atmospheric Constituent Transport*. Cambridge University Press, Cambridge, United Kingdom, 392 pp.
- Falkowski, P.G.**, M.E. Katz, A.J. Milligan, K. Fennel, B.S. Kramer, M.P. Aubry, R.A. Berner, M.J. Novacek, and W.M. Zapol, 2005: The rise of oxygen over the past 205 million years and the evolution of large placental mammals. *Science*, **309(5744)**, 2202-2204.
- Feely, R.A.**, C.L. Sabine, K. Lee, W. Berelson, J. Kleypas, V.J. Fabry, and F.J. Millero, 2004: Impact of anthropogenic CO<sub>2</sub> on the CaCO<sub>3</sub> system in the oceans. *Science*, **305(5682)**, 362-366.
- Friedli, H.**, H. Lüttscher, H. Oeschger, U. Siegenthaler, and B. Stauffer, 1986: Ice core record of <sup>13</sup>C/<sup>12</sup>C ratio of atmospheric CO<sub>2</sub> in the past two centuries. *Nature*, **324(6094)**, 237-238.
- Giampietro, M.**, S. Ulgiati, and D. Pimentel, 1997: Feasibility of large-scale biofuel production: does an enlargement of scale change the picture? *Bioscience*, **47(9)**, 587-600.
- Gloor, M.**, N. Gruber, J. Sarmiento, C.L. Sabine, R.A. Feely, and C. Rodenbeck, 2003: A first estimate of present and preindustrial air-sea CO<sub>2</sub> flux patterns based on ocean interior carbon measurements and models. *Geophysical Research Letters*, **30(1)**, 1010, doi:10.1029/2002GL015594.
- Goodale, C.L.**, M.J. Apps, R.A. Birdsey, C.B. Field, L.S. Heath, R.A. Houghton, J.C. Jenkins, G.H. Kohlmaier, W. Kurz, S.R. Liu, G.J. Nabuurs, S. Nilsson, and A.Z. Shvidenko, 2002: Forest carbon sinks in the Northern Hemisphere. *Ecological Applications*, **12(3)**, 891-899.
- Graham, P.J.**, 2003: Potential for climate change mitigation through afforestation: an economic analysis of fossil fuel substitution and carbon sequestration benefits. *Agroforestry Systems*, **59(1)**, 85-95.
- Greenblatt, J.B.** and J.L. Sarmiento, 2004: Variability and climate feedback mechanisms in ocean uptake of CO<sub>2</sub>. In: *The Global Carbon Cycle: Integrating Humans, Climate, and the Natural World* [Field, C.B. and M.R. Raupach (eds.)]. Island Press, Washington, DC, pp. 257-275.
- Gruber, N.**, P. Friedlingstein, C.B. Field, R. Valentini, M. Heimann, J.E. Richey, P. Romero-Lankao, E.-D. Schulze, and C.-T.A. Chen, 2004: The vulnerability of the carbon cycle in the 21st century: an assessment of carbon-climate-human interactions. In: *The Global Carbon Cycle: Integrating Humans, Climate, and the Natural World* [Field, C.B. and M.R. Raupach (eds.)]. Island Press, Washington, DC, pp. 45-76.
- Gurney, K.R.**, R.M. Law, A.S. Denning, P.J. Rayner, D. Baker, P. Bousquet, L. Bruhwiler, Y.H. Chen, P. Ciais, S.M. Fan, I.Y. Fung, M. Gloor, M. Heimann, K. Higuchi, J. John, E. Kowalczyk, T. Maki, S. Maksyutov, P. Peylin, M. Prather, B.C. Pak, J. Sarmiento, S. Taguchi, T. Takahashi, and C.W. Yuen, 2003: TransCom 3 CO<sub>2</sub> inversion intercomparison: 1. annual mean control results and sensitivity to transport and prior flux information. *Tellus B*, **55(2)**, 555-579.
- Gurney, K.R.**, R.M. Law, A.S. Denning, P.J. Rayner, B.C. Pak, D. Baker, P. Bousquet, L. Bruhwiler, Y.H. Chen, P. Ciais, I.Y. Fung, M. Heimann, J. John, T. Maki, S. Maksyutov, P. Peylin, M. Prather, and S. Taguchi, 2004: Transcom 3 inversion intercomparison: model mean results for the estimation of seasonal carbon sources and sinks. *Global Biogeochemical Cycles*, **18**, GB1010, doi:10.1029/2003GB002111.
- Hansen, J.**, L. Nazarenko, R. Ruedy, M. Sato, J. Willis, A. Del Genio, D. Koch, A. Lacis, K. Lo, S. Menon, T. Novakov, J. Perlitz, G. Russell, G.A. Schmidt, and N. Tausnev, 2005: Earth's energy imbalance: confirmation and implications. *Science*, **308(5727)**, 1431-1435.
- Heath, J.**, E. Ayres, M. Possell, R.D. Bardgett, H.I.J. Black, H. Grant, P. Ineson, and G. Kerstiens, 2005: Rising atmospheric CO<sub>2</sub> reduces sequestration of root-derived soil carbon. *Science*, **309(5741)**, 1711-1713.
- Hegerl, G.C.**, F.W. Zwiers, P. Braconnot, N.P. Gillett, Y. Luo, J.A.M. Orsini, N. Nicholls, J.E. Penner, and P.A. Stott, 2007: Understanding and Attributing Climate Change. In: *Climate Change 2007: The Physical Science Basis*. Contribution of Working Group I to Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., Qin, D., Manning, M., Chen, Z., Marquis, M., Averyt, K. B., Tignor, M., and Miller, H. L. (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, pp. 665-745.
- Hoffert, M.I.**, K. Caldeira, G. Benford, D.R. Criswell, C. Green, H. Herzog, A.K. Jain, H.S. Kheshgi, K.S. Lackner, J.S. Lewis, H.D. Lightfoot, W. Manheimer, J.C. Mankins, M.E. Mael, L.J. Perkins, M.E. Schlesinger, T. Volk, and T.M.L. Wigley, 2002: Advanced technology paths to global climate stability: energy for a greenhouse planet. *Science*, **298(5595)**, 981-987.
- Houghton, R.A.** 1999: The annual net flux of carbon to the atmosphere from changes in land use 1850-1990. *Tellus B*, **51(2)**, 298-313.
- Houghton, R.A.**, J.L. Hackler, and K.T. Lawrence, 1999: The U.S. carbon budget: contributions from land-use change. *Science*, **285(5427)**, 574-578.
- Jacobson, A.R.**, S.E. Mikaloff-Fletcher, N. Gruber, J.L. Sarmiento, M. Gloor, and TransCom Modelers, 2007: A joint atmosphere-ocean inversion for surface fluxes of carbon dioxide. 1. Methods and global-scale fluxes. *Global Biogeochemical Cycles*, **21**, doi:10.1029/2005GB002556.
- Joos, F.** and I.C. Prentice, 2004: A paleo-perspective on changes in atmospheric CO<sub>2</sub> and climate. In: *The Global Carbon Cycle: Integrating Humans, Climate, and the Natural World* [Field, C.B. and M.R. Raupach (eds.)]. Island Press, Washington, DC, pp. 165-186.
- Keeling, C.D.**, R.B. Bacastow, A.E. Bainbridge, C.A. Ekdahl, P.R. Guenther, and L.S. Waterman, 1976: Atmospheric carbon dioxide variations at Mauna Loa Observatory, Hawaii. *Tellus*, **28(6)**, 538-551.
- Keeling, R.F.**, S.C. Piper, and M. Heimann, 1996: Global and hemispheric CO<sub>2</sub> sinks deduced from changes in atmospheric O<sub>2</sub> concentration. *Nature*, **381(6579)**, 218-221.

- Keeling**, R.F. and B.B. Stephens, 2001: Antarctic sea ice and the control of Pleistocene climate instability. *Paleoceanography*, **16(1)**, 112-131.
- Kirschbaum**, M.U.F., 2003: To sink or burn? A discussion of the potential contributions of forests to greenhouse gas balances through storing carbon or providing biofuels. *Biomass and Bioenergy*, **24(4-5)**, 297-310.
- Kurz**, W.A. and M.J. Apps, 1999: A 70-year retrospective analysis of carbon fluxes in the Canadian forest sector. *Ecological Applications*, **9(2)**, 526-547.
- Law**, R.M., Y.-H. Chen, K.R. Gurney, and TransCom 3 Modellers, 2003: TransCom 3 CO<sub>2</sub> inversion intercomparison: 2. sensitivity of annual mean results to data choices. *Tellus B*, **55(2)**, 580-595.
- Le Quéré**, C. and N. Metzl, 2004: Natural processes regulating the ocean uptake of CO<sub>2</sub>. In: *The Global Carbon Cycle: Integrating Humans, Climate, and the Natural World* [Field, C.B. and M.R. Raupach (eds.)]. Island Press, Washington, DC, pp. 243-256.
- Marland**, G. and R.M. Rotty, 1984: Carbon dioxide emissions from fossil fuels: a procedure for estimation and results for 1950-1982. *Tellus B*, **36(4)**, 232-261.
- Martin**, J.H., 1990: Glacial-interglacial CO<sub>2</sub> change: the iron hypothesis. *Paleoceanography*, **5(1)**, 1-13.
- Masarie**, K.A. and P.P. Tans, 1995: Extension and integration of atmospheric carbon dioxide data into a globally consistent measurement record. *Journal of Geophysical Research (Atmospheres)*, **100(D6)**, 11593-11610.
- Matear**, R.J. and B.I. McNeil, 2003: Decadal accumulation of anthropogenic CO<sub>2</sub> in the Southern Ocean: a comparison of CFC-age derived estimates to multiple-linear regression estimates. *Global Biogeochemical Cycles*, **17(4)**, 1113, doi:10.1029/2003GB002089.
- Matsumoto**, K., J.L. Sarmiento, R.M. Key, O. Aumont, J.L. Bullister, K. Caldeira, J.M. Campin, S.C. Doney, H. Drange, J.C. Dutay, M. Follows, Y. Gao, A. Gnanadesikan, N. Gruber, A. Ishida, F. Joos, K. Lindsay, E. Maier-Reimer, J.C. Marshall, R.J. Matear, P. Monfray, A. Mouchet, R. Najjar, G.K. Plattner, R. Schlitzer, R. Slater, P.S. Swathi, I.J. Totterdell, M.F. Weirig, Y. Yamanaka, A. Yool, and J.C. Orr, 2004: Evaluation of ocean carbon cycle models with data-based metrics. *Geophysical Research Letters*, **31**, L07303-07304.
- McGillis**, W.R., J.B. Edson, J.E. Hare, and C.W. Fairall, 2001: Direct covariance air-sea CO<sub>2</sub> fluxes. *Journal of Geophysical Research*, **106(C8)**:16729-16745.
- Newsam**, G.N. and I.G. Enting, 1988: Inverse problems in atmospheric constituent studies: I. determination of surface sources under a diffusive transport approximation. *Inverse Problems*, **4(4)**, 1037-1054.
- Norby**, R.J., E.H. DeLucia, B. Gielen, C. Calfapietra, C.P. Giardina, J.S. King, J. Ledford, H.R. McCarthy, D.J.P. Moore, R. Ceulemans, P. De Angelis, A.C. Finzi, D.F. Karnosky, M.E. Kubiske, M. Lukac, K.S. Pregitzer, G.E. Scarascia-Mugnozza, W.H. Schlesinger, and R. Oren, 2005: Forest response to elevated CO<sub>2</sub> is conserved across a broad range of productivity. *Proceedings of the National Academy of Sciences*, **102(50)**, 18052-18056.
- Oren**, R., D.S. Ellsworth, K.H. Johnsen, N. Phillips, B.E. Ewers, C. Maier, K.V.R. Schäfer, H. McCarthy, G. Hendrey, S.G. McNulty, and G.G. Katul, 2001: Soil fertility limits carbon sequestration by forest ecosystems in a CO<sub>2</sub>-enriched atmosphere. *Nature*, **411(6836)**, 469-472.
- Orr**, J.C., V.J. Fabry, O. Aumont, L. Bopp, S.C. Doney, R.A. Feely, A. Gnanadesikan, N. Gruber, A. Ishida, F. Joos, R.M. Key, K. Lindsay, E. Maier-Reimer, R. Matear, P. Monfray, A. Mouchet, R.G. Najjar, G.K. Plattner, K.B. Rodgers, C.L. Sabine, J.L. Sarmiento, R. Schlitzer, R.D. Slater, I.J. Totterdell, M.F. Weirig, Y. Yamanaka, and A. Yool, 2005: Anthropogenic ocean acidification over the twenty-first century and its impact on calcifying organisms. *Nature*, **437(7059)**, 681-686.
- Pacala**, S. and R. Socolow, 2004: Stabilization wedges: solving the climate problem for the next 50 years with current technologies. *Science*, **305(5686)**, 968-972.
- Pacala**, S.W., G.C. Hurtt, D. Baker, P. Peylin, R.A. Houghton, R.A. Birdsey, L. Heath, E.T. Sundquist, R.F. Stallard, P. Ciais, P. Moorcroft, J.P. Caspersen, E. Shevliakova, B. Moore, G. Kohlmaier, E. Holland, M. Gloor, M.E. Harmon, S.M. Fan, J.L. Sarmiento, C.L. Goodale, D. Schimel, and C.B. Field, 2001: Consistent land- and atmosphere-based U.S. carbon sink estimates. *Science*, **292(5525)**, 2316-2320.
- Petit**, J.R., J. Jouzel, D. Raynaud, N.I. Barkov, J.-M. Barnola, I. Basile, M. Bender, J. Chappellaz, M. Davis, G. Delaygue, M. Delmotte, V.M. Kotlyakov, M. Legrand, V.Y. Lipenkov, C. Lorius, L. Pépin, C. Ritz, E. Saltzman, and M. Stievenard, 1999: Climate and atmospheric history of the past 420,000 years from the Vostok ice core, Antarctica. *Nature*, **399(6735)**, 429-436.
- Peylin**, P., P. Bousquet, C. Le Quere, S. Sitch, P. Friedlingstein, G. McKinley, N. Gruber, P. Rayner, and P. Ciais, 2005: Multiple constraints on regional CO<sub>2</sub> flux variations over land and oceans. *Global Biogeochemical Cycles*, **19**, GB1011, doi:10.1029/2003GB002214.
- Post**, W.M., T.H. Peng, W.R. Emanuel, A.W. King, V.H. Dale, and D.L. Deangelis, 1990: The global carbon cycle. *American Scientist*, **78(4)**, 310-326.
- Prentice**, I.C., G.D. Farquhar, M.J.R. Fasham, M.L. Goulden, M. Heimann, V.J. Jaramillo, H.S. Kheshgi, C. Le Quéré, R.J. Scholes, and D.W.R. Wallace, 2001: The carbon cycle and atmospheric carbon dioxide. In: *Climate Change 2001: The Scientific Basis*. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change [J. T. Houghton, Y. Ding, D. J. Griggs, M. Noguer, P. J. van der Linden, X. Dai, K. Maskell, and C. A. Johnson (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, pp. 183-237.
- Rodenbeck**, C., S. Houweling, M. Gloor, and M. Heimann, 2003: CO<sub>2</sub> flux history 1982-2001 inferred from atmospheric data us-

- ing a global inversion of atmospheric transport. *Atmospheric Chemistry and Physics*, **3(6)**, 1919-1964.
- Rousteenoja**, K., T.R. Carter, K. Jylha, and H. Tuomenvirta, 2003: *Future Climate in World Regions: An Intercomparison of Model-Based Projections for the New IPCC Emissions Scenarios*. Finnish Environment Institute, Helsinki, pp. 83.
- Running**, S.W., R.R. Nemani, F.A. Heinsch, M.S. Zhao, M. Reeves, and H. Hashimoto, 2004: A continuous satellite-derived measure of global terrestrial primary production. *Bioscience*, **54(6)**, 547-560.
- Sabine**, C.L., R.A. Feely, N. Gruber, R.M. Key, K. Lee, J.L. Bullister, R. Wanninkhof, C.S. Wong, D.W.R. Wallace, B. Tilbrook, F.J. Millero, T.H. Peng, A. Kozyr, T. Ono, and A.F. Rios, 2004a: The oceanic sink for anthropogenic CO<sub>2</sub>. *Science*, **305(5682)**, 367-371.
- Sabine**, C.L., M. Heiman, P. Artaxo, D.C.E. Bakker, C.-T.A. Chen, C.B. Field, N. Gruber, C. LeQuéré, R.G. Prinn, J.E. Richey, P. Romero-Lankao, J.A. Sathaye, and R. Valentini, 2004b: Current status and past trends of the carbon cycle. In: *The Global Carbon Cycle: Integrating Humans, Climate, and the Natural World* [Field, C.B. and M.R. Raupach (eds.)]. Island Press, Washington, DC, pp. 17-44.
- Schimel**, D., J. Melillo, H. Tian, A.D. McGuire, D. Kicklighter, T. Kittel, N. Rosenbloom, S. Running, P. Thornton, D. Ojima, W. Parton, R. Kelly, M. Sykes, R. Neilson, and B. Rizzo, 2000: Contribution of increasing CO<sub>2</sub> and climate to carbon storage by ecosystems in the United States. *Science*, **287(5460)**, 2004-2006.
- Schimel**, D.S., J.I. House, K.A. Hibbard, P. Bousquet, P. Ciais, P. Peylin, B.H. Braswell, M.J. Apps, D. Baker, A. Bondeau, J. Canadell, G. Churkina, W. Cramer, A.S. Denning, C.B. Field, P. Friedlingstein, C. Goodale, M. Heimann, R.A. Houghton, J.M. Melillo, B. Moore, D. Murdiyarso, I. Noble, S.W. Pacala, I.C. Prentice, M.R. Raupach, P.J. Rayner, R.J. Scholes, W.L. Steffen, and C. Wirth, 2001: Recent patterns and mechanisms of carbon exchange by terrestrial ecosystems. *Nature*, **414(6860)**, 169-172.
- Shaw**, M.R., E.S. Zavaleta, N.R. Chiariello, E.E. Cleland, H.A. Mooney, and C.B. Field, 2002: Grassland responses to global environmental changes suppressed by elevated CO<sub>2</sub>. *Science*, **298(5600)**, 1987-1990.
- Siegenthaler**, U. and H. Oeschger, 1987: Biospheric CO<sub>2</sub> emissions during the past 200 years reconstructed by deconvolution of ice core data. *Tellus B*, **39(1-2)**, 140-154.
- Sigman**, D.M. and E.A. Boyle, 2000: Glacial/interglacial variations in atmospheric carbon dioxide. *Nature*, **407(6806)**, 859-869.
- Takahashi**, T., R.A. Feely, R.F. Weiss, R. Wanninkhof, D.W. Chipman, S.C. Sutherland, and T.T. Takahashi, 1997: Global air-sea flux of CO<sub>2</sub>: an estimate based on measurements of sea-air pCO<sub>2</sub> difference. *Proceedings of the National Academy of Sciences*, **94(16)**, 8292-8299.
- Takahashi**, T., S.C. Sutherland, C. Sweeney, A. Poisson, N. Metzl, B. Tilbrook, N. Bates, R. Wanninkhof, R.A. Feely, C. Sabine, J. Olafsson, and Y. Nojiri, 2002: Global sea-air CO<sub>2</sub> flux based on climatological surface ocean pCO<sub>2</sub>, and seasonal biological and temperature effects. *Deep-Sea Research II*, **49(9-10)**, 1601-1622.
- Tarantola**, A., 1987: *Inverse Problem Theory: Methods for Data Fitting and Model Parameter Estimation*. Elsevier, New York, 630 pp.
- Thoning**, K.W., P.P. Tans, and W.D. Komhyr, 1989: Atmospheric carbon dioxide at Mauna Loa Observatory 2. Analysis of the NOAA GMCC data, 1974-1985. *Journal of Geophysical Research*, **94(D6)**, 8549-8565.
- van der Werf**, G.R., J.T. Randerson, G.J. Collatz, L. Giglio, P.S. Kasibhatla, A.F. Arellano, S.C. Olsen, and E.S. Kasischke, 2004: Continental-scale partitioning of fire emissions during the 1997 to 2001 El Niño/La Niña period. *Science*, **303(5654)**, 73-74.
- Wanninkhof**, R. and W. McGillis, 1999: A cubic relationship between air-sea CO<sub>2</sub> exchange and wind speed. *Geophysical Research Letters*, **26(13)**, 1889-1892.
- Wofsy**, S.C., M.L. Goulden, J.W. Munger, S.-M. Fan, P.S. Bakwin, B.C. Daube, S.L. Bassow, and F.A. Bazzaz, 1993: Net exchange of CO<sub>2</sub> in a mid-latitude temperate forest. *Science*, **260(5112)**, 1314-1317.

## CHAPTER 3 REFERENCES

- Aldy**, J.E., 2005: An environmental kuznets curve analysis of US state level carbon dioxide emissions. *Journal of Environment and Development*, **14(1)**, 58-72.
- Ang**, B.W. and F.Q. Zhang, 2000: A survey of index decomposition analysis in energy and environmental studies. *Energy*, **25(12)**, 1149-1176.
- Bradley**, B.A., R.A. Houghton, J.F. Mustard, and S.P. Hamburg, 2006: Invasive grass reduces aboveground carbon stocks in shrublands of the Western US. *Global Change Biology*, **12(10)**, 1815-1822.
- Cairns**, M.A., P.K. Haggerty, R. Alvarez, B.H.J. De Jong, and I. Olmsted, 2000: Tropical Mexico's recent land-use change: a region's contribution to the global carbon cycle. *Ecological Applications*, **10(5)**, 1426-1441.
- Casler**, S.D. and A.Z. Rose, 1998: Carbon dioxide emissions in the US economy. *Environmental and Resource Economics*, **11(3-4)**, 349-363.
- Caspersen**, J.P., S.W. Pacala, J.C. Jenkins, G.C. Hurtt, P.R. Moorcroft, and R.A. Birdsey, 2000: Contributions of land-use history to carbon accumulation in U.S. forests. *Science*, **290(5495)**, 1148-1151.
- Cox**, P.M., R.A. Betts, C.D. Jones, S.A. Spall, and I.J. Totterdell, 2000: Acceleration of global warming due to carbon-cycle feedbacks in a coupled climate model. *Nature*, **408(6809)**, 184-187.
- Davis**, W.B., A.H. Sanstad, and J.G. Koomey, 2002: Contributions of weather and fuel mix to recent declines in US energy and carbon intensity. *Energy Economics*, **25(4)**, 375-396.

- Defries**, R.S., R.A. Houghton, M.C. Hansen, C.B. Field, D. Skole, and J. Townshend, 2002: Carbon emissions from tropical deforestation and regrowth based on satellite observations for the 1980s and 1990s. *Proceedings of the National Academy of Sciences*, **99(22)**, 14256-14261.
- EIA** (Energy Information Administration), 2005: *Historical Data Overview*. U.S. Department of Energy. Available at [http://www.eia.doe.gov/overview\\_hd.html](http://www.eia.doe.gov/overview_hd.html); <http://cdiac.ornl.gov/ftp/trends/emis/meth-reg.htm>
- Environment Canada**, 2005: *Canada's Greenhouse Gas Inventory 1990-2003: Initial Submission*. Greenhouse Gas Division, Environment Canada, Ottawa, Ontario, Canada. Available at [http://unfccc.int/national\\_reports/annex\\_i\\_ghg\\_inventories/national\\_inventories\\_submissions/items/2761.php](http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/2761.php)
- Environment Canada**, 2006: *National Inventory Report 1990-2004: Greenhouse Gas Sources and Sinks in Canada*. Greenhouse Gas Division, Environment Canada, Ottawa, Ontario, Canada. Available at [http://www.cc.gc.ca/pdb/ghg/inventory\\_report/2004\\_report/toc\\_e.cfm](http://www.cc.gc.ca/pdb/ghg/inventory_report/2004_report/toc_e.cfm)
- Fan**, S.-M., M. Gloor, J. Mahlman, S. Pacala, J. Sarmiento, T. Takahashi, and P. Tans, 1998: Atmospheric and oceanic CO<sub>2</sub> data and models imply a large terrestrial carbon sink in North America. *Science*, **282(5388)**, 442-446.
- Flannigan**, M.D., K.A. Logan, B.D. Amiro, W.R. Skinner, and B.J. Stocks, 2005: Future area burned in Canada. *Climatic Change*, **72(1)**, 1-16.
- Gillett**, N.P., A.J. Weaver, F.W. Zwiers, and M.D. Flannigan, 2004: Detecting the effect of climate change on Canadian forest fires. *Geophysical Research Letters*, **31**, L18211, doi:10.1029/2004GL020876
- Goetz**, S.J., A. Bunn, G. Fiske, and R.A. Houghton. 2005: Satellite-observed photosynthetic trends across boreal North America associated with climate and fire disturbance. *Proceedings of the National Academy of Sciences*, **102(38)**, 13521-13525.
- Golove**, W.H. and L.J. Schipper, 1998: Long-term trends in U.S. manufacturing energy consumption and carbon dioxide emissions. *Energy*, **21(7/8)**, 683-692.
- Goodale**, C.L., M.J. Apps, R.A. Birdsey, C.B. Field, L.S. Heath, R.A. Houghton, J.C. Jenkins, G.H. Kohlmaier, W. Kurz, S. Liu, G.J. Nabuurs, S. Nilsson, and A.Z. Shvidenko, 2002: Forest carbon sinks in the Northern Hemisphere. *Ecological Applications*, **12(3)**, 891-899.
- Greening**, L.A., W.B. Davis, L. Schipper, and M. Khrushch, 1997: Comparison of six decomposition methods: application to aggregate energy intensity for manufacturing in 10 OECD countries. *Energy Economics*, **19(3)**, 375-390.
- Greening**, L.A., W.B. Davis, and L. Schipper, 1998: Decomposition of aggregate carbon intensity for the manufacturing sector: comparison of declining trends from 10 OECD countries for the period 1971-1993. *Energy Economics*, **20(1)**, 43-65.
- Greening**, L.A., M. Ting, and W.B. Davis, 1999: Decomposition of aggregate carbon intensity for freight: trends from 10 OECD countries for the period 1971-1993. *Energy Economics*, **21(4)**, 331-361.
- Greening**, L.A., M. Ting, and T.J. Krackler, 2001: Effects of changes in residential end-uses on aggregate carbon intensity: comparison of 10 OECD countries for the period 1970 through 1993. *Energy Economics*, **23(2)**, 153-178.
- Greening**, L.A., 2004: Effects of human behavior on aggregate carbon intensity of personal transportation: comparison of 10 OECD countries for the period 1970-1993. *Energy Economics*, **26(1)**, 1-30.
- Grossman**, G.M. and A.B. Krueger, 1995: Economic growth and the environment. *Quarterly Journal of Economics*, **60(2)**, 353-375.
- Guo**, L.B. and R.M. Gifford, 2002: Soil carbon stocks and land use change: a meta analysis. *Global Change Biology*, **8(4)**, 345-360.
- Gurney**, K.R., R.M. Law, A.S. Denning, P.J. Rayner, B.C. Pak, D. Baker, P. Bousquet, L. Bruhwiler, Y.H. Chen, P. Ciais, I.Y. Fung, M. Heimann, J. John, T. Maki, S. Maksyutov, P. Peylin, M. Prather, and S. Taguchi, 2004: Transcom 3 inversion inter-comparison: model mean results for the estimation of seasonal carbon sources and sinks. *Global Biogeochemical Cycles*, **18**, GB1010, doi:10.1029/2003GB002111.
- Houghton**, R.A., J.L. Hackler, and K.T. Lawrence, 1999: The U.S. carbon budget: contributions from land-use change. *Science*, **285(5427)**, 574-578.
- Houghton**, R.A. and J.L. Hackler, 2000: Changes in terrestrial carbon storage in the United States. 1. The roles of agriculture and forestry. *Global Ecology and Biogeography*, **9(12)**, 125-144.
- Houghton**, R.A., J.L. Hackler, and K.T. Lawrence, 2000: Changes in terrestrial carbon storage in the United States. 2. The role of fire and fire management. *Global Ecology and Biogeography*, **9(2)**, 145-170.
- Hungate**, B.A., J.S. Dukes, M.R. Shaw, Y. Luo, and C.B. Field, 2003: Nitrogen and climate change. *Science*, **302(5650)**, 1512-1513.
- Hurt**, G.C., S.W. Pacala, P.R. Moorcroft, J. Caspersen, E. Shevliakova, R.A. Houghton, and B. Moore III, 2002: Projecting the future of the U.S. carbon sink. *Proceedings of the National Academy of Sciences*, **99(3)**, 1389-1394.
- Jackson**, R.B., J.L. Banner, E.G. Jobbagy, W.T. Pockman, and D.H. Wall, 2002: Ecosystem carbon loss with woody plant invasion of grasslands. *Nature*, **418(6898)**, 623-626.
- Kahn**, M.E., 2003: The geography of US pollution intensive trade: evidence from 1958 to 1994. *Regional Science and Urban Economics*, **33(4)**, 383-400.
- Körner**, C., R. Asshoff, O. Bignucolo, S. Hättenschwiler, S.G. Keel, S. Peláez-Riedl, S. Pepin, R.T.W. Siegwolf, and G. Zott, 2005: Carbon flux and growth in mature deciduous forest trees exposed to elevated CO<sub>2</sub>. *Science*, **309(5739)**, 1360-1362.
- Lenzen**, M., M. Wier, C. Cohen, H. Hayami, S. Pachauri, and R. Schaeffer, 2006: A comparative multivariate analysis of household energy requirements in Australia, Brazil, Denmark, India and Japan. *Energy*, **31(2-3)**, 181-207.

- Lindmark**, M., 2004: Patterns of historical CO<sub>2</sub> intensity transitions among high and low income countries. *Explorations in Economic History*, **41(4)**, 426-447.
- Luo**, Y., D. Hui, and D. Zhang, 2006: Elevated carbon dioxide stimulates net accumulations of carbon and nitrogen in terrestrial ecosystems: a meta-analysis. *Ecology*, **87(1)**, 53-63.
- Masera**, O.R., M.J. Ordóñez, and R. Dirzo, 1997: Carbon emissions from Mexican forests: current situation and long-term scenarios. *Climatic Change*, **35(3)**, 265-295.
- Maddison**, A., 2003: *The World Economy: Historical Statistics*. OECD, Paris, 384 pp.
- Marland**, G., T.A. Boden, and R.J. Andres, 2005: Global, regional, and national CO<sub>2</sub> emissions. In: *Trends: A Compendium of Data on Global Change*. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, TN. Available at <http://cdiac.esd.ornl.gov/trends/trends.htm>
- Mitchell**, B.R., 1998: *International Historical Statistics: The Americas, 1750-1993*. Stockton Press, New York, 4th ed., 830 pp.
- Oren**, R., D.S. Ellsworth, K.H. Johnsen, N. Phillips, B.E. Ewers, C. Maier, K.V.R. Schäfer, H. McCarthy, G. Hendrey, S.G. McNulty, and G.G. Katul, 2001: Soil fertility limits carbon sequestration by forest ecosystems in a CO<sub>2</sub>-enriched atmosphere. *Nature*, **411(6836)**, 469-472.
- Pacala**, S.W., G.C. Hurtt, D. Baker, P. Peylin, R.A. Houghton, R.A. Birdsey, L. Heath, E.T. Sundquist, R.F. Stallard, P. Ciais, P. Moorcroft, J.P. Caspersen, E. Shevliakova, B. Moore, G. Kohlmaier, E. Holland, M. Gloor, M.E. Harmon, S.M. Fan, J.L. Sarmiento, C.L. Goodale, D. Schimel, and C.B. Field, 2001: Consistent land- and atmosphere-based U.S. carbon sink estimates. *Science*, **292(5525)**, 2316-2320.
- Pacala**, S. and R. Socolow, 2004: Stabilization wedges: solving the climate problem for the next 50 years with current technologies. *Science*, **305(5686)**, 968-972.
- Rothman**, D.S., 1998: Environmental Kuznets curves—real progress or passing the buck: a case for consumption-based approaches. *Ecological Economics*, **25(2)**, 177-194.
- Schapoff**, S., W. Lucht, D. Gerten, S. Sitch, W. Cramer, and I.C. Prentice, 2006: Terrestrial biosphere carbon storage under alternative climate projections. *Climatic Change*, **74(1-3)**, 97-122.
- Selden**, T.M. and D. Song, 1994: Environmental quality and development—is there a Kuznets curve for air pollution emissions? *Journal of Environmental Economics and Management*, **27(2)**, 147-162.
- Skog**, K.E. and G.A. Nicholson, 1998: Carbon cycling through wood products: the role of wood and paper products in carbon sequestration. *Forest Products Journal*, **48(7)**, 75-83. Available at <http://www.fpl.fs.fed.us/documents/pdf1998/skog98a.pdf>
- Skog**, K.E., K. Pingoud, and J.E. Smith, 2004: A method countries can use to estimate changes in carbon stored in harvested wood products and the uncertainty of such estimates. *Environmental Management*, **33 (Supplement 1)**, S65-S73.
- Smith**, J.E. and L.S. Heath, 2005: Land use change and forestry and related sections. In: *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2003*. Excerpted, EPA 430-R-05-003, U.S. Environmental Protection Agency. Available at <http://yosemite.epa.gov/oar/globalwarming.nsf/content/ResourceCenterPublicationsGHGEmissions.html>
- Stallard**, R.F., 1998: Terrestrial sedimentation and the carbon cycle: coupling weathering and erosion to carbon burial. *Global Biogeochemical Cycles*, **12(2)**, 231-257.
- Suri**, V. and D. Chapman, 1998: Economic growth, trade and energy: implications for the environmental Kuznets curve. *Ecological Economics*, **25(2)**, 195-208.
- Westerling**, A., H.G. Hidalgo, D.R. Cayan, and T.W. Swetnam, 2006: Warming and earlier Spring increase western U.S. forest wildfire activity. *Science*, **313(5789)**, 940-943.
- World Forest Institute**, 2006: *Wood Products Trade: North America* Available at <http://wfi.worldforestrycenter.org/trade-2.htm>
- WRI** (World Resources Institute), 2005: *EarthTrends—The Environmental Information Portal*. Available at <http://earthtrends.wri.org/>

## CHAPTER 4 REFERENCES

- AF&PA** (American Forest & Paper Association and the U.S. Department of Energy) 2006: *Forest Products Industry Technology Roadmap*. Agenda 2020 Technology Alliance, Washington, DC, 54 pp.
- Bohm**, P. and C. Russell 1986: Comparative analysis of alternative policy instruments. In: *Handbook of Natural Resource and Energy Economics* [Kneese, A. and J. Sweeney (eds.)]. Vol. 2, Elsevier, New York, pp. 395-460.
- Casler**, S.D. and A. Rose, 1998: Carbon dioxide emissions in the U.S. economy: a structural decomposition analysis. *Environmental and Resource Economics*, **11(3-4)**, 349-363.
- CBO** (Congressional Budget Office), 2003: *The Economic Costs of Fuel Economy Standards Versus a Gasoline Tax*. Congress of the United States, Washington, DC, 24 pp.
- CBO** (Congressional Budget Office), 2006: *Evaluating the Role of Prices and R&D in Reducing Carbon Dioxide Emissions*. Congress of the United States, Washington, DC, 19 pp.
- Croci**, E. (ed.), 2005: *The Handbook of Environmental Voluntary Agreements: Design, Implementation and Evaluation Issues*, Springer, The Netherlands, 391 pp.
- Darnall**, N. and J. Carmin, 2003: *The Design and Rigor of U. S. Voluntary Environmental Programs: Results from the Survey*, North Carolina State University, Raleigh, 55 pp.
- DOE** (U.S. Department of Energy), 2006: *Carbon Sequestration R&D Overview, CO<sub>2</sub> capture and storage costs*. Available at <http://www.fossil.energy.gov/programs/sequestration/overview.html>
- DOE/EERE** (U.S. Department of Energy, Energy Efficiency and Renewable Energy), 2006: *Building America Puts Residential Building Research to Work*. Washington, DC. Available at [http://www.eere.energy.gov/buildings/building\\_america/](http://www.eere.energy.gov/buildings/building_america/)

- DOE/EIA** (Energy Information Administration), 2006: *Annual Energy Review 2006*: U.S. Department of Energy, , Washington, DC, 401 pp.
- EIA** (Energy Information Administration), 2003a: *International Energy Outlook: 2003*. DOE/EIA-0484(2003), U.S. Department of Energy, Washington, DC, 249 pp.
- EIA** (Energy Information Administration), 2003b: *Analysis of S.139, the Climate Stewardship Act of 2003*. SR/OIAF/2003-02, U.S. Department of Energy, Washington, DC, 515 pp.
- EIA** (Energy Information Administration), 2005. *Emissions of Greenhouse Gases in the United States, 2005*, U.S. Department of Energy, Washington, DC, 106 pp.
- Ellerman**, D., P. Joskow, R. Schmalansee, J. Montero, and E. Bailey, 2000: *Markets for Clean Air: The U.S. Acid Rain Program*, Cambridge University Press, New York, 384 pp.
- Energy Modeling Forum** (EMF), 2000: *Costs of GHG Emissions Reduction*, Stanford University, Palo Alto, CA.
- EPA** (Environmental Protection Agency), 2005: *Greenhouse Gas Mitigation Potential in U.S. Forestry and Agriculture*. EPA-430-R-05-006, U.S. Environmental Protection Agency, Washington, DC, 154 pp.
- Feng**, Hongli, C.L. Kling, L.A. Kurkalova, and S. Secchi, 2003: Subsidies! The Other Incentive-Based Instrument: The Case of the Conservation Reserve Program. Working Paper 03-WP 345, Center for Agricultural and Rural Development, Iowa State University, Ames, IA, 29 pp.
- Greene**, D.L., P.D. Patterson, M. Singh, and J. Li, 2005: Feebates, rebates and gas guzzler taxes: a study of incentives for increased fuel economy. *Energy Policy*, 33(6), 757–776.
- Goulder**, L.H., 2004: Induced Technological Change and Climate Policy. Pew Center on Global Climate Change, Washington, DC, 38 pp.
- Grubb**, M., C. Carraro and J. Schellnhuber 2006: Technological change for atmospheric stabilization: introductory overview to the innovation modeling comparison project, *The Energy Journal*, Special Issue on Endogenous Technological Change and the Economics of Atmospheric Stabilization, pp. 1-16.
- Gupta**, S., D. A. Tirpak, N. Burger, J. Gupta, N. Höhne, A. I. Boncheva, G. M. Kanoan, C. Kolstad, J. A. Kruger, A. Michaelowa, S. Murase, J. Pershing, T. Saijo, A. Sari, 2007: Policies, instruments and co-operative arrangements. In: *Climate Change 2007: Mitigation*. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp 745-807.
- Harrison**, K., 1999: Talking with the donkey: cooperative approaches to environmental protection, *Journal of Industrial Ecology*, 2(3), 51–72.
- Herzog**, H, 1999: The economics of CO<sub>2</sub> capture. In: *Greenhouse Gas Control Technologies* [Reimer, P., B. Eliasson, A. Wokaum (eds.)]. Elsevier Science Ltd., Oxford, United Kingdom, pp. 101–106.
- Hoffert**, M.I., K. Calderia, A.K. Jain, E.F. Haites, L.D.D. Harvey, S.D. Potter, M.E. Schlesinger, S.H. Schneider, R.G. Watson, T.M.L. Wigley, and D.J. Wuebbles, 1998: Energy implications of future stabilization of atmospheric CO<sub>2</sub> content. *Nature*, 395(6705), 881–884.
- Hoffert**, M.I., K. Caldeira, G. Benford, D.R. Criswell, C. Green, H. Herzog, A.K. Jain, H.S. Kheshgi, K.S. Lackner, J.S. Lewis, H.D. Lightfoot, W. Manheimer, J.C. Mankins, M.E. Mael, L.J. Perkins, M.E. Schlesinger, T. Volk, and T.M.L. Wigley, 2002: Advanced technology paths to global climate stability: energy for a greenhouse planet. *Science*, 298(5595), 981-987.
- IEA** (International Energy Agency), 2006a: *Key World Energy Statistics, 2006*, IEA, Paris, France, 82 pp.
- IEA** (International Energy Agency), 2006b: *Energy Technology Perspectives: Scenarios and Strategies to 2050*, IEA, Paris, France, 484 pp.
- IPCC**, 2000: *Land Use, Land-use Change and Forestry. A Special Report of the Intergovernmental Panel on Climate Change* [Watson, R.T., I.R. Noble, B. Bolin, N.H. Ravindranath, D.J. Verardo, and D.J. Dokken (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 388 pp.
- IPCC**, 2001: *Climate Change 2001: The Scientific Basis*. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change [Houghton, J.T., Y. Ding, D.J. Griggs, M. Noguer, P.J. van der Linden, X. Dai, K. Maskell, and C.A. Johnson (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 881 pp.
- IPCC**, 2005: *IPCC Special Report on Carbon Dioxide Capture and Storage, Summary for Policymakers*. Approved by the 8th Session of IPCC Working Group III, Montreal, Canada, 53 pp.
- Jaccard**, M., J. Nyboer, and B. Sadownik, 2002: *The Cost of Climate Policy*. University of British Columbia Press, Vancouver, British Columbia, Canada. 242 pp.
- Jaccard**, M., J. Nyboer, C. Bataille, and B. Sadownik, 2003a: Modeling the cost of climate policy: distinguishing between alternative cost definitions and long-run cost dynamics. *The Energy Journal*, 24(1), 49-73.
- Jaccard**, M., R. Loulou, A. Kanudia, J. Nyboer, A. Bailie, and M. Labriet, 2003b: Methodological contrasts in costing GHG abatement policies: optimization and simulation modeling of micro-economic effects in Canada. *European Journal of Operations Research*, 145(1), 148-164.
- Jaccard**, M., N. Rivers, C. Bataille, R. Murphy, J. Nyboer and B. Sadownik, 2006: *Burning Our Money to Warm the Planet*. Commentary No. 234, C.D. Howe Institute, Toronto, 31 pp.
- Kauppi**, P., R. Sedjo, M. Apps, C. Cerri, T. Fujimori, H. Janzen, O. Krankina, W. Makundi, G. Marland, O. Masera, G.-J. Nabuurs, W. Razali, N.H. Ravindranath, 2001. Technological and economic potential of options to enhance, maintain and manage biological carbon reservoirs and geo-engineering. In: *Climate Change 2001 - Mitigation*. Contribution of Working Group III to the Third Assessment Report of Inter-Governmental Panel on Climate Change [Metz, B., O. Davidson, R. Swart,

- and J. Pan (eds.)]. UNEP-WMO. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 301-343.
- Kates**, R., and T. Wilbanks, 2003: Making the global local: responding to climate change concerns from the bottom up. *Environment*, **45(3)**, 12-23.
- King**, A., and M. Lenox, 2000: Industry self-regulation without sanctions: the chemical industry's responsible care program. *Academy of Management Journal*, **43(4)**, 698-716.
- Marland**, G., B.A. McCarl, and U.A. Schneider, 2001: Soil carbon: policy and economics. *Climatic Change*, **51(1)**, 101-117.
- Martin**, N., E. Worrell, M. Ruth, L. Price, R.N. Elliott, A.M. Shipley, and J. Thorne, 2001: *Emerging Energy-Efficient Industrial Technologies*. LBNL Report Number 46990, New York State Edition, published by American Council for an Energy-Efficient Economy (ACEEE), Washington DC, 183 pp.
- National Academies**, 2004: *The Hydrogen Economy: Opportunities, Costs, Barriers, and R&D Needs*. The National Academies Press, Washington, DC, 240 pp.
- NRC** (National Research Council) and National Academy of Engineering, 2004: *Committee on Alternatives and Strategies for Future Hydrogen Production and Use*. The National Academies. Washington, DC, 148 pp.
- NCEP** (National Commission on Energy Policy), 2005: *Ending the Energy Stalemate: A Bipartisan Strategy to Meet America's Energy Challenge*. Washington, DC, 148 pp.
- OECD** (Organization for Economic Co-operation and Development), 2003a: *Technology Innovation, Development and Diffusion*. OECD and IEA Information Paper, COM/ENV/EPOC/IEA/SLT(2003)4, Paris, France, 48 pp.
- OECD** (Organization for Economic Co-operation and Development), 2003b: *Voluntary Approaches for Environmental Policy: Effectiveness, Efficiency and Usage in Policy Mixes*. OECD, Paris, France, 143 pp.
- Pacala**, S. and R. Socolow, 2004: Stabilization wedges: solving the climate problem for the next 50 years with current technologies. *Science*, **305(5686)**, 968-972.
- Parry**, I.W.H., R. Williams, and L.H. Goulder, 1999: When can carbon abatement policies increase welfare? The fundamental role of distorted factor markets. *Journal of Environmental Economics and Management*, **37(1)**, 52-84.
- Raupach**, M., J.G. Canadell, D.C. Bakker, P. Ciais, M.J. Sans, J.Y. Fank, J.M. Melillo, P. Romero-Lankao, J.A. Sathaye, E.D. Schulze, P. Smith, and J. Tscharley, 2004: Atmospheric stabilization in the context of carbon-climate-human interactions. In: *Toward CO<sub>2</sub> Stabilization: Issues, Strategies, and Consequences* [Field, C. and M. Raupach (eds.)]. Island Press, Washington, DC.
- Rose**, A., and G. Oladosu, 2002: Greenhouse gas reduction in the U.S.: identifying winners and losers in an expanded permit trading system. *Energy Journal*, **23(1)**, 1-18.
- Sedjo**, R.A., 2001: Forest 'sinks' as a tool for climate-change policymaking: a look at the advantages and challenges. *Resources*, **143**, 21-23.
- Sedjo**, R.A. and S.K. Swallow, 2002: Voluntary eco-labeling and the price premium. *Land Economics*, **87(2)**, 272-284.
- Stern**, N., 2006: *Stern Review on the Economics of Climate Change*, Cambridge University Press, Cambridge, United Kingdom. Available at [http://www.hm-treasury.gov.uk/independent\\_reviews/stern\\_review\\_economics\\_climate\\_change/sternreview\\_index.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm)
- Stern**, P.C and Fineberg, H.V. (eds.), 1996: *Understanding Risk: Informing Decisions in a Democratic Society*. National Academy Press, Washington, DC, 249 pp.
- Swift**, B., 2001: How environmental laws work: an analysis of the utility sector's response to regulation of nitrogen oxides and sulfur dioxide under the Clean Air Act, *Tulane Environmental Law Journal*, **14(2)**, 309-425.
- Tietenberg**, T., 2000: *Environmental and Natural Resource Economics*. 5th Edition, Addison-Wesley, New York, 630 pp.
- Tietenberg**, T. and D. Wheeler, 2001: Empowering the community: information strategies for pollution control. In: *Frontiers of Environmental Economics* [Folmer, H., H.L. Gabel, S. Gerring, and A. Rose (eds.)]. Edward Elgar, Cheltenham, United Kingdom, 417 pp.
- USGBC** (U.S. Green Building Council), 2005: LEED for New Construction-Rating System 2.2 U.S. Green Building Council, Washington, DC. 83pp.
- Welch**, E.W., A. Mazur, and S. Bretschneider, 2000: Voluntary behavior by electric utilities: levels of adoption and contribution of the Climate Challenge Program to the reduction of carbon dioxide, *Journal of Public Policy Analysis and Management*, **19(3)**, 407-426.
- Worrell**, E., L.K. Price, and C. Galitsky, 2004: *Emerging Energy-efficient Technologies in Industry: Case Studies of Selected Technologies*. Environmental Technologies Division, Lawrence Berkeley Laboratory, University of California at Berkeley, 67 pp.

## CHAPTER 5 REFERENCES

- Adler**, P., R. Barrett, M. Bean, J. Birkoff, C. Ozawa, and E. Rudin, 1999: *Managing Scientific and Technical Information in Environmental Cases: Principles and Practices for Mediators*. U.S. Institute for Environmental Conflict Resolution, Tucson, AZ, 74 pp.
- Agrawala**, S., K. Broad, and D.H. Guston, 2001: Integrating climate forecasts and societal decision making: challenges to an emergent boundary organization. *Science, Technology and Human Values*, **26(4)**, 454-477.
- Apps**, M., J. Canadell, M. Heimann, V. Jaramillo, D. Murdiyarso, D. Schimel, and M. Manning, 2003: *Expert Meeting Report: IPCC Meeting on Current Understanding of the Processes Affecting Terrestrial Carbon Stocks and Human Influences Upon Them*. Geneva, Switzerland, July 21-23, 2003. Available at <http://www.ipcc.ch/pub/carbon.pdf>. 37 pp.
- Cash**, D.W., 2001: In order to aid in diffusing useful and practical information: agricultural extension and boundary organizations. *Science, Technology and Human Values*, **26**, 431-453.

- Cash**, D., W. Clark, F. Alcock, N. Dickson, N. Eckley, D. Guston, J. Jäger, and R. Mitchell, 2003: Knowledge systems for sustainable development. *Proceedings of the National Academy of Sciences*, **100(14)**, 8086-8091.
- Cash**, D.W., J.C. Borck, A.G. Patt, 2006: Countering the loading-dock approach to linking science and decision making. *Science, Technology and Human Values*, **31(4)**, 465-494.
- Curry**, T., D. Reiner, S. Ansolabehere, and H. Herzog, *How Aware is the Public of Carbon Capture and Storage?* Presented at the Seventh International Conference on Greenhouse Gas Control Technologies, Vancouver, Canada, September 2004. Available at <http://sequestration.mit.edu/bibliography/policy.html>
- Denning**, A.S., et al., 2005: *Science Implementation Strategy for the North American Carbon Program*. Report of the NACP Implementation Strategy Group, U.S. Carbon Cycle Interagency Working Group, U.S. Carbon Cycle Science Program, Washington, DC, 68 pp. Available at <http://www.nacarbon.org/nacp/documents.html>
- Dilling**, L., 2007: Towards science in support of decision making: characterizing the supply of carbon cycle science. *Environmental Science and Policy*, **10(1)**, 48-61.
- Dilling**, L., S.C. Doney, J. Edmonds, K.R. Gurney, R.C. Harris, D. Schimel, B. Stephens, and G. Stokes, 2003: The role of carbon cycle observations and knowledge in carbon management. *Annual Review of Environment and Resources*, **28**, 521-558.
- Douglas**, M. and A. Wildavsky, 1984: *Risk and Culture*. University of California Press, Berkeley, CA, 221 pp. (1982 ed.)
- Ehrmann**, J. and B. Stinson, 1999: Joint fact-finding and the use of technical experts. In: *The Consensus Building Handbook* [Susskind, L., J.T. Larmer, and S. McKearnan (eds.)]. Sage Publications, Thousand Oaks, CA, 1147 pp.
- Farrell**, A. and J. Jäger (eds.), 2005: *Assessments of Regional and Global Environmental Risks: Designing Processes for the Effective Use of Science in Decision-Making*. Resources for the Future, Washington, DC, 301 pp.
- Gibbons**, M., C. Limoges, and H. Nowotny, 1994: *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies*. Sage, London, 179 pp.
- Environment Canada**, 2005: *Project Green: Moving Forward on Climate Change: A Plan for Honoring Our Kyoto Commitment*. Available at <http://www.climatechange.gc.ca/english/newsroom/2005/plan05.asp>
- Guston**, D.H., 2001: Boundary organizations in environmental policy and science: An introduction. *Science, Technology, & Human Values*, **26(4)**, 399-408, Special Issue: Boundary Organizations in Environmental Policy and Science (Autumn 2001).
- Holling**, C.S. (ed.), 1978: *Adaptive Environmental Assessment and Management*. John Wiley, New York, 377 pp.
- Holling**, C.S., 1995: What barriers? What bridges? In: *Barriers and Bridges to the Renewal of Ecosystems and Institutions* [Gunderson L.H., C.S. Holling, and S.S. Light (eds.)]. Columbia University Press, New York, pp. 3-34.
- IPCC**, 2000: *Land Use, Land-use Change and Forestry. A Special Report of the Intergovernmental Panel on Climate Change* [Watson, R.T., I.R. Noble, B. Bolin, N.H. Ravindranath, D.J. Verardo, and D.J. Dokken (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 388 pp.
- IPCC**, 2007: *Climate Change 2007: The Physical Science Basis*. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1009 pp.
- Lahsen**, M., 1999: The detection and attribution of conspiracies: the controversy over chapter 8. In: *Paranoia Within Reason: A Casebook on Conspiracy as Explanation*. [Marcus, G.E. (ed.)]. University of Chicago Press, Chicago, IL, pp. 111-136.
- Lahsen**, M., 2007: Trust through participation? Problems of knowledge in climate decision making. In: *The Social Construction of Climate Change*. [Pettinger, Mary E. (ed.)]. Ashgate Publishing, pp. 173-196. Available at [http://sciencepolicy.colorado.edu/our\\_science\\_their\\_science/pubs/lahsen\\_2007\\_pettenger1.pdf](http://sciencepolicy.colorado.edu/our_science_their_science/pubs/lahsen_2007_pettenger1.pdf)
- Lahsen**, M. and C. A. Nobre, 2007: Challenges of connecting international science and local level sustainability efforts: the case of the Large-Scale Biosphere-Atmosphere Experiment in Amazonia. *Environmental Science & Policy*, **10(1)**, 62-74.
- Lemos**, M.C. and B.J. Morehouse, 2005: The co-production of science and policy in integrated climate assessments. *Global Environmental Change*, **15(1)**, 57-68.
- Martinez**, J. and A. Fernandez-Bremauntz (eds.), 2004: Cambio climático: una visión desde Mexico. Secretaría de Medio Ambiente y Recursos Naturales, Instituto Nacional de Ecología, Mexico City, Mexico, 525 pp.
- Mitchell**, R.B., W.C. Clark, D.W. Cash, and F. Alcock, 2004: Science, scientists, and the policy process: lessons from global environmental assessments for the northwest forest. In: *Forest Futures: Science, Politics and Policy for the Next Century* [Arabas, K. and J. Bowersox (eds.)]. Rowman and Littlefield, pp. 95-111.
- Mitchell**, R.B., W.C. Clark, D.W. Cash, and N.M. Dickson (eds.), 2006: *Global Environmental Assessments: Information and Influence*. The MIT Press, Cambridge, MA, 344 pp.
- Moser**, S., 2005: Stakeholder involvement in the first U.S. national assessment of the potential consequences of climate variability and change: an evaluation, finally. In: *Public Participation in Environmental Assessment and Decision Making*. National Research Council, Committee on Human Dimensions of Global Change, NAS/NRC, Washington, DC (in press).
- NRC** (National Research Council), 1999: *Making Climate Forecasts Matter*. National Academy Press, Washington, DC, 175 pp.
- NRC** (National Research Council), 2004: *Committee to Review the U.S. Climate Change Science Program Strategic Plan*. Im-

- plementing Climate and Global Change Research: A Review of the Final U.S. Climate Change Science Program Strategic Plan, National Academy Press, Washington, DC, 96 pp.
- NRC** (National Research Council), 2005: *Roundtable on Science and Technology for Sustainability*. Knowledge-Action Systems for Seasonal to Interannual Climate Forecasting: Summary of a Workshop. National Academy Press, Washington, DC, 32 pp.
- Parson**, E.A., 2003: *Protecting the Ozone Layer: Science and Strategy*. Oxford University Press, Oxford, United Kingdom, 400 pp.
- Patt**, A., P. Suarez, and C. Gwata, 2005a: Effects of seasonal climate forecasts and participatory workshops among subsistence farmers in Zimbabwe. *Proceedings of the National Academy of Sciences*, **102(35)**, 12623-12628.
- Patt**, A.G., R. Klein, and A. de la Vega-Leinert, 2005b: Taking the uncertainties in climate change vulnerability assessment seriously. *Comptes Rendus Geosciences*, **337(4)**, 411-424.
- Pulwarty**, R. S. and K.T. Redmond, 1997: Climate and salmon restoration in the Columbia River Basin: the role and usability of seasonal forecasts. *Bulletin of the American Meteorological Society*, **78(3)**, 381-396.
- Richards**, K., 2004: A brief overview of carbon sequestration economics and policy. *Environmental Management*, **33(4)**, 545-558.
- Sarmiento**, J.L. and S.C. Wofsy, 1999: *A U.S. Carbon Cycle Science Plan: A Report of the Carbon and Climate Working Group*. U.S. Global Change Research Program, Washington, DC. Available at <http://www.nacarbon.org/nacp/documents.html>
- Schröter**, D., W. Cramer, R. Leemans, I.C. Prentice, M.B. Araújo, N.W. Arnell, A. Bondeau, H. Bugmann, T.R. Carter, C.A. Gracia, A.C. de la Vega-Leinert, M. Erhard, F. Ewert, M. Glendining, J.I. House, S. Kankaanpää, R.J.T. Klein, S. Lavorel, M. Lindner, M.J. Metzger, J. Meyer, T.D. Mitchell, I. Reginster, M. Rounsevell, S. Sabaté, S. Sitch, B. Smith, J. Smith, P. Smith, M.T. Sykes, K. Thonnicke, W. Thuiller, G. Tuck, S. Zehle, B. Zierl, 2005: Ecosystem service supply and vulnerability to global change in Europe. *Science*, **310(5752)**, 1333-1337.
- Shackley**, S., C. McLachlan, and C. Gough, 2005: The public perception of carbon dioxide capture and storage in the UK: results from focus groups and a survey. *Climate Policy*, **4(4)**, 377-398.
- Stokes**, D.E., 1997: *Pasteur's Quadrant: Basic Science and Technological Innovation*. Brookings Institution Press, Washington, DC, 180 pp.
- U.S. Climate Change Science Program**, 2003: *Strategic Plan for the U.S. Climate Change Science Program*. Last accessed February 20, 2006. Available at <http://www.climatescience.gov>
- U.S. Climate Change Science Program**, 2006: *Our Changing Planet: The US Climate Change Science Program for Fiscal Year 2006*. A Report by the Climate Change Science Program and the Subcommittee on Global Change Research. Last accessed February 23, 2006, Washington, DC. Available at: <http://www.climatescience.gov>
- U.S. Department of State**, 2004: *U.S. Climate Change Policy: The Bush Administration's Actions on Global Climate Change*. Fact sheet released by the White House, Office of the Press Secretary Washington, DC, November 19, 2004. Available at <http://www.state.gov/g/oes/rls/fs/2004/38641.htm>
- Van den Belt**, M., 2004: *Mediated Modeling: A Systems Dynamic Approach to Environmental Consensus Building*. Island Press, Washington, DC, 296 pp.
- Van House**, N.A., 2003: Digital libraries and collaborative knowledge construction. In: *Digital Library Use: Social Practice in Design and Evaluation* [Bishop, A.P., B.P. Buttenfield, and N.A. Van House (eds.)]. MIT Press, pp. 271-295.
- Western Economic Diversification Canada**, 2006: *Government of Canada and Government of Alberta Announce \$16.6 Million Worth of Joint Projects*. Available at [http://www.wd.gc.ca/mediacentre/2006/may23-02a\\_e.asp](http://www.wd.gc.ca/mediacentre/2006/may23-02a_e.asp)
- Yaniv**, I., 2004: Receiving other people's advice: influence and benefit. *Organizational Behavior and Human Decision Processes*, **93(1)**, 1-13.

## PART II OVERVIEW REFERENCES

- Andres**, R.J., D.J. Fielding, G. Marland, T.A. Boden, N. Kumar, and A.T. Kearney, 1999: Carbon dioxide emissions from fossil-fuel use, 1751–1950. *Tellus B*, **51(4)**, 759–765.
- Andres**, R.J., J.S. Gregg, L.M. Losey, and G. Marland, 2005: *Monthly Resolution Fossil-Fuel-Derived Carbon Dioxide Emissions for the Countries of the North American Carbon Program*. Proceedings of the Seventh International Carbon Dioxide Conference, Broomfield, CO, September, 2005, pp. 157–158.
- Blasing**, T.J., C.T. Broniak, and G. Marland, 2005a: The annual cycle of fossil-fuel carbon dioxide emissions in the United States. *Tellus B*, **57(2)**, 107–115. Available at <http://cdiac.esd.ornl.gov>
- Blasing**, T.J., C. Broniak, and G. Marland, 2005b: State-by-state carbon dioxide emissions from fossil-fuel use in the United States 1960–2000. *Mitigation and Adaptation Strategies for Global Change*, **10(4)**, 659–674.
- Environment Canada**, 2005: *Canada's Greenhouse Gas Inventory: 1990–2003*. National Inventory Report, April 15, 2005, Greenhouse Gas Division, Environment Canada, 339 pp.
- Gregg**, J.S., 2005: *Improving the Temporal and Spatial Resolution of Carbon Dioxide Emissions Estimates from Fossil-Fuel Consumption*. A thesis submitted to the graduate faculty of the University of North Dakota, August, 2005, 404 pp. Available at <http://cdiac.esd.ornl.gov>
- Gurney**, K.R., Y.H. Chen, T. Maki, S.R. Kawa, A. Andrews, and Z. Zhu, 2005: Sensitivity of atmospheric CO<sub>2</sub> inversion to seasonal and interannual variations in fossil-fuel emissions. *Journal of Geophysical Research*, **110(D10)**, 10308, doi:10.1029/2004JD005373.
- IEA** (International Energy Agency), 2005: *CO<sub>2</sub> Emissions from Fuel Combustion: 1971–2003*. OECD/IEA, Paris, France, 556 pp.

- IPCC**, 1997: *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories (3 Volumes)*. IPCC Technical Support Unit, Bracknell, United Kingdom, 3 volumes (looseleaf).
- Losey**, L.M., 2004: *Monthly and Seasonal Estimates of Carbon Dioxide Emissions from Fossil Fuel Consumption in Canada, Mexico, Brazil, The United Kingdom, France, Spain, Italy, and Poland*. A thesis submitted to the graduate faculty of the University of North Dakota, May, 2004, 328 pp. Available at <http://cdiac.essd.ornl.gov>
- Marland**, G., T. Boden, and R.J. Andres, 1995: Carbon dioxide emissions from fossil fuel burning: emissions coefficients and the global contribution of eastern European countries. *Időjárás*, **99**, 157–170.
- Marland**, G., T.A. Boden, and R.J. Andres, 2005: Global, regional, and national CO<sub>2</sub> emissions. In: *Trends: A Compendium of Data on Global Change*. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, TN. Available at <http://cdiac.essd.ornl.gov/trends/trends.htm>
- Mexico**, 2001: *México: Segunda Comunicación Nacional ante la Convención Marco de las Naciones Unidas sobre el Cambio Climático*. Comité Intersecretarial Sobre Cambio Climático, Secretaría de Medio Ambiente y Recursos Naturales (Semarnat), Mexico City, 374 pp.
- Neumayer**, E., 2004: National carbon dioxide emissions: geography matters. *Area*, **36**(1), 33–40.
- USEPA** (U.S. Environmental Protection Agency), 2005: *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2003*. EPA 430-R-05-003, EPA, Washington, DC.
- CHAPTER 6 REFERENCES**
- AAG** (Association of American Geographers), 2003: *Global Change and Local Places: Estimating, Understanding, and Reducing Greenhouse Gases*. Cambridge University Press, Cambridge, United Kingdom, 270 pp.
- Caldeira**, K., D. Day, W. Fulkerson, M. Hoffert, 2005: *Climate Change Technology Exploratory Research*. Working paper, Climate Policy Center, Washington, DC, 10 pp. Available online at <http://www.cpc-inc.org/>
- EIA** (Energy Information Administration), 2004: *Emissions of Greenhouse Gases in the United States, 2004*. U.S. Department of Energy, , Washington, DC, 134 pp.
- EIA** (Energy Information Administration), 2005: *International Energy Outlook, 2005*. U.S. Department of Energy, , Washington, DC, 186 pp.
- EIA** (Energy Information Administration), 2006a: *International Energy Outlook, 2006*. U.S. Department of Energy, , Washington, DC, 192 pp.
- EIA** (Energy Information Administration), 2006b: *Annual Energy Review 2006*. U.S. Department of Energy, , Washington, DC, 401 pp.
- Environment Canada**, 2003: *Canada's Greenhouse Gas Inventory, 1990–2003*. Available at [http://www.ec.gc.ca/pdb/ghg/inventory\\_report/2003\\_report/ts\\_2\\_e.cfm](http://www.ec.gc.ca/pdb/ghg/inventory_report/2003_report/ts_2_e.cfm)
- Environment Canada**, 2005: *The Green Lane: Climate Change: The Greenhouse Gas Emissions Outlook to 2020*. Available at [http://www.ec.gc.ca/climate/overview\\_2020-e.html](http://www.ec.gc.ca/climate/overview_2020-e.html)
- GAO** (General Accounting Office), 2004: *Climate Change: Analysis of Two Studies of Estimated Costs of Implementing the Kyoto Protocol*. General Accounting Office, Washington, DC, 20 pp.
- Government of Canada**, 2005: *Project Green: Moving Forward on Climate Change*. Government of Canada, Ottawa, 48 pp
- Government of Mexico**, 2001: *Second National Communication*. Submitted to UNFCCC by the Secretaría de Medio Ambiente y Recursos Naturales, Mexico City.
- Hoffert**, M.I., K. Caldeira, G. Benford, D.R. Criswell, C. Green, H. Herzog, A.K. Jain, H.S. Kheshgi, K.S. Lackner, J.S. Lewis, H.D. Lightfoot, W. Manheimer, J.C. Mankins, M.E. Mael, L.J. Perkins, M.E. Schlesinger, T. Volk, and T.M.L. Wigley, 2002: Advanced technology paths to global climate stability: energy for a greenhouse planet. *Science*, **298**(5595), 981–987.
- Interlaboratory Working Group**, 1997: *Scenarios of U.S. Carbon Reductions*. Oak Ridge National Laboratory, Oak Ridge, TN.
- Interlaboratory Working Group**, 2000: *Scenarios for a Clean Energy Future*. Oak Ridge National Laboratory, Oak Ridge, TN, 371 pp.
- IPCC**, 2001: *Climate Change, 2001: Mitigation*. Contribution of Working Group III to the Third Assessment Report of the Intergovernmental Panel on Climate Change [B. Metz (ed.)]. Cambridge University Press, Cambridge, United Kingdom, 752 pp.
- IPCC**, 2006: *Carbon Dioxide Capture and Storage*. IPCC Special Report. [B. Metz (ed.)]. Cambridge University Press, Cambridge, United Kingdom, 431 pp.
- Lewis**, N., 2005: *Global Energy Perspective*. Paper presented to the U.S. DOE Laboratory Energy and Development Working Group (LERDWG), Washington, DC. Available at <http://nsr.caltech.edu/energy.html>
- NAS** (National Academy of Sciences), 1992: *Policy Implications of Greenhouse Warming: Mitigation, Adaptation, and the Science Base*. Washington, DC, 127 pp.
- NAS** (National Academy of Sciences), 1999: *Our Common Journey: A Transition Toward Sustainability*. National Academy Press, Washington, DC, 363 pp.
- National Commission on Energy Policy**, 2004: *Ending the Energy Stalemate: A Bipartisan Strategy to Meet America's Energy Challenges*. NCEP, Washington, DC, 148 pp.
- National Laboratory Directors**, 1997: *Technology Opportunities to Reduce U.S. Greenhouse Gas Emissions*. Prepared for the U.S. Department of Energy, 95 pp.
- OTA** (Office of Technology Assessment), 1991: *Changing By Degrees: Steps to Reduce Greenhouse Gases*. OTA-0-482, Washington, DC, 354 pp.
- Pacala**, S. and R. Socolow, 2004: Stabilization wedges: solving the climate problem for the next 50 years with current technologies. *Science*, **305**(5686), 968–972.

**Pew Center on Global Climate Change.** 2002: *Climate Change Mitigation in Developing Countries: Brazil, China, Mexico, South Africa and Turkey*. Report prepared by Chandler W., R. Schaffer, Z. Dadi, P.R. Shukla, F. Tudela, O. Davidson, and S. Alpan-Atamar, Washington, DC, 64 pp.

**Tremblay, A.**, 2004: *Greenhouse Gas Emissions - Fluxes and Processes: hydroelectric Reservoirs and Natural Environments*. Springer, New York, 732 pp.

**U.S. Climate Change Technology Program,** 2005: *Strategic Plan: Draft for Public Comment*. Available at <http://www.climatechange.gov/stratplan/draft/index.htm>

**U.S. DOE** (U.S. Department of Energy), 2004: National energy policy/overview/Canada. In: *Energy Trends*. Available at <http://energytrends.pnl.gov/Canada/ca004.htm>

**Wilbanks, T.**, 1992: Energy policy responses to concerns about global climate change. In: *Global Climate Change: Implications, Challenges and Mitigation Measures* [Majumdar, S.K., L.S. Kalkstein, B. Yamal, E.W. Miller, and L.M. Rosenfeld (eds.)]. Pennsylvania Academy of Sciences, Easton, PA, pp. 452-470.

## CHAPTER 7 REFERENCES

**CBO** (Congressional Budget Office), 2003: *The Economic Costs of Fuel Economy Standards Versus a Gasoline Tax*. Congress of the United States, Washington, DC, December, 24 pp.

**CIA** (Central Intelligence Agency), 2005: *The World Factbook*. Washington, DC. Available at <http://www.cia.gov/cia/publications/factbook>

**Davis, S.C.** and S.W. Diegel, 2004: *Transportation Energy Data Book: Edition 24*. ORNL-6973, Oak Ridge National Laboratory, Oak Ridge, TN.

**Environment Canada**, 2005a: *Canada's Greenhouse Gas Inventory: 1990-2003*. National Inventory Report, Ottawa, Ontario, Canada, 339 pp.

**Environment Canada**, 2005b: *Moving Forward on Climate Change: A Plan for Honouring our Kyoto Commitment*. Ottawa, Canada. Available at <http://www.climatechange.gc.ca>

**Fulton, L.** and G. Eads, 2004: *IEA/SMP Model Documentation and Reference Case Projection*. World Business Council for Sustainable Development. Available at <http://www.wbcsd.ch/web/publications/mobility/smp-model-document.pdf>, July.

**GAO** (U.S. General Accounting Office), 2003: *Climate Change, Selected Nations' Reports on Greenhouse Gas Emissions Varied in Their Adherence to Standards*. GAO-04-98, Washington, DC, December. Available at <http://www.gao.gov/cgi-bin/getrpt?GAO-04-98>.

**General Motors Corporation**, Argonne National Laboratory, ExxonMobil, and Shell, 2001: *Well-to-Wheel Energy Use and Greenhouse Gas Emissions of Advanced Fuel/Vehicle Systems: North American Analysis*. Vol. 2, Argonne National Laboratory, Argonne, IL.

**Greene, D.L.** and A. Schafer, 2003: *Reducing Greenhouse Gas Emissions from U.S. Transportation*. Pew Center on Global Climate Change, Arlington, VA, May, 68 pp.

**Greene, D.L.**, P.D. Patterson, M. Singh, and J. Li, 2005: Feebates, rebates and gas-guzzler taxes: a study of incentives for increased fuel economy. *Energy Policy*, **33**(6), 757-776.

**Harrington, W.** and V. McConnell, 2003: *Motor Vehicles and the Environment*. RFF Report, Resources for the Future, Washington, DC, April, 92 pp.

**IEA** (International Energy Agency), 2005a: *World Energy Outlook 2005: Middle East and North Africa Insights*. OECD, Paris, France, 629 pp.

**IEA** (International Energy Agency), 2005b: *Prospects for Hydrogen and Fuel Cells*. OECD, Paris, France, 253 pp.

**IEA** (International Energy Agency), 2004: *Biofuels for Transport*. OECD, Paris, France, 210 pp.

**IEA** (International Energy Agency), 2001: *Saving Oil and Reducing CO<sub>2</sub> Emissions in Transport*. OECD, Paris, France, 194 pp.

**ILWG** (Interlaboratory Working Group), 2000: *Scenarios for a Clean Energy Future*. Prepared by Lawrence Berkeley National Laboratory (LBNL-44029) and Oak Ridge National Laboratory (ORNL/CON-476) for the U.S. Department of Energy, 371 pp.

**INE** (Instituto Nacional de Ecología), 2003: *Energía. Sector Transporte 2000-2001*, Inventario Nacional de Emisiones de Gases de Efecto Invernadero, INGEI/2000/ENC, Mexico D.F. Available at <http://www.ine.gob.mx/dgicurg/cclimatico/inventario.html>

**Marland, G.**, T. Boden, and R.J. Andres, 2005: *Global CO<sub>2</sub> Emissions from Fossil Fuel Burning, Cement Manufacture and Gas Flaring, 1751-2002*. Available at [http://cdiac.esd.ornl.gov/ftp/ndp030/global.1751\\_2002.ems](http://cdiac.esd.ornl.gov/ftp/ndp030/global.1751_2002.ems), November 8.

**Moomaw, W.R.** and J.R. Moreira, 2001: Technological and economic potential of greenhouse gas emissions reduction (Chapter 3). In: *Climate Change 2001: Mitigation* [Metz, Davidson, Swart, and Pan (eds.)]. Cambridge University Press, Cambridge, United Kingdom, pp. 167-277.

**Nakićenović, N.**, A. Grübler, and A. McDonald, 1998: *Global Energy Perspectives*. Cambridge University Press, Cambridge, United Kingdom, 299 pp.

**NAS** (National Academy of Sciences), 2004: *The Hydrogen Economy: Opportunities, costs, barriers and research and development needs*. National Academies Press, Washington, DC, 240 pp.

**NAS** (National Academy of Sciences), 2002: *Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards*. National Academies Press, Washington, DC, 166 pp.

**NATS** (North American Transportation Statistics), 2005: *Various Tables*. A joint project of the U.S. Bureau of Transportation Statistics, Statistics Canada and Instituto Nacional de Estadística Geográfica e Informática (INEGI), Mexico. Available at <http://nats.sct.gob.mx/lib/series>

**NCEP** (National Commission on Energy Policy), 2004: *Ending the Energy Stalemate, A Bipartisan Strategy to Meet America's Energy Challenges*, Chapter 3, Washington, D.C.: National

- Commission on Energy Policy, 148 pp. Available at <http://www.energycommission.org>
- NRCan** (Natural Resources Canada), 2006: *Comprehensive Energy Use Database Tables*. Transportation sector, table 1: Secondary energy use by source, table 8: GHG emissions by transportation mode. Available at [http://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/trends\\_tran\\_ca.cfm](http://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/trends_tran_ca.cfm)
- NRTEE** (National Round Table on the Environment and the Economy), 2005: *Economic Instruments for Long-term Reductions in Energy-based Carbon Emissions*. Renouf Publishing Co., Ltd., Ottawa, Ontario, Canada, 132 pp.
- Patterson**, P., D. Greene, E. Steiner, S. Plotkin, M. Singh, A. Vyas, M. Mintz, D. Santini, S. Folga, J. Moore, P. Reilly-Roe, K. Cliffe, R. Talbot, P. Khannna, and V. Stanciulescu, 2003: *Joint DOE/NRCan Study of North American Transportation Energy Futures*. Energy Efficiency and Renewable Energy, U.S. Department of Energy, Washington, DC, May. Available at [http://www.eere.energy.gov/ba/pdfs/final\\_2050\\_pres.pdf](http://www.eere.energy.gov/ba/pdfs/final_2050_pres.pdf)
- Perlack**, R.D., L.L. Wright, A.F. Turhollow, R.L. Graham, B.J. Stokes, and D.C. Erbach, 2005: *Biomass as Feedstock for a Bioenergy and Bioproducts Industry: The Technical Feasibility of a Billion-Ton Annual Supply*. DOE/GO-102995-2135, U.S. Department of Energy, Washington, DC.
- Rodríguez**, H.M., 2005: *Perspectivas del Uso de los Hidrocarburos a Nivel México*. Presentation, Subsecretario de Hidrocarburos, Mexico City, Mexico, slides online.
- SENER** (Secretaria de Energia), 2005: *Sistema de Información Energetica, información estadística*. Available at <http://sie.energia.gob.mx/sie>, under *Consumo final de energía en el sector transporte*.
- Turrentine**, T. and K. Kurani, 2004: *Automotive Fuel Economy in the Purchase and Use Decisions of Households*. ITS-RR-04-31, Institute for Transportation Studies, University of California at Davis, Davis, CA, 35 pp.
- U.S. DOE** (U.S. Department of Energy), 2005: *Hydrogen, Fuel Cells and Infrastructure Technologies Program: Multi-Year Research, Development and Demonstration Plan*. DOE/GO-102003-1741, Energy Efficiency and Renewable Energy. Available at <http://www.eere.energy.gov>
- U.S. DOE/EIA** (U.S. Department of Energy, Energy Information Administration), 2005a: *Annual Energy Review 2004*. DOE/EIA-0384(2004), Washington, DC, August. Available at <http://www.eia.doe.gov>
- U.S. DOE/EIA** (U.S. Department of Energy, Energy Information Administration), 2005b: *International Energy Outlook 2005*. DOE/EIA-0484(2005), Washington, DC, 186 pp.
- U.S. DOE/EIA** (U.S. Department of Energy, Energy Information Administration), 2003: *Analysis of S.139, the Climate Stewardship Act of 2003*. SR/OIAF/2003-02, Washington, DC, 515 pp.
- U.S. DOT** (U.S. Department of Transportation), 1998: *Transportation and Global Climate Change: A Review and Analysis of the Literature*. Federal Highway Administration, Washington, DC.
- U.S. EPA** (U.S. Environmental Protection Agency), 2005: *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2003*. EPA 430-R-05-003, Environmental Protection Agency, Office of Atmospheric Programs, Washington, DC.
- Wang**, M.Q., 2005: Argonne Expert Addresses Energy and Environmental Impacts of Fuel Ethanol. *TransForum*, **5**(2), 3-4.
- Weiss**, M.A., J.B. Heywood, E.M. Drake, A. Schafer, and F.F. AuYeung, 2000: *On the Road in 2020: A life-cycle analysis of new automobile technologies*. Energy Laboratory Report #MIT EL 00-003, Energy Laboratory, Massachusetts Institute of Technology, Cambridge, MA.
- Williams**, R.H., 2005: *CO<sub>2</sub> Capture and Storage Strategies for Coal and Biomass to Reduce GHG Emissions for Synfuels*. Princeton Environmental Institute, Princeton University, Princeton, NJ, March. Presentation, 154 pp.
- WBCSD** (World Business Council for Sustainable Development), 2004: *Mobility 2030*. The Sustainable Mobility Project, Geneva, Switzerland. Available at <http://www.wbcsd.org>

## CHAPTER 8 REFERENCES

- Barlaz**, M.A. and R.K. Ham, 1990: *The Use of Mass Balances for Calculation of the Methane Potential of Fresh and Anaerobically Decomposed Refuse*. Proceedings from the GRCDA 13th Annual International Landfill Gas Symposium, March 27-29, 1990, Silver Spring, MD, GRCDA—The Association of Solid Waste Management Professionals, 1990, 235 pp.
- Barlaz**, M., 1994: *Measurement of the Methane Potential of the Paper, Yard Waste, and Food Waste Components of Municipal Solid Waste*. Unpublished paper, Department of Civil Engineering, North Carolina State University.
- Bogner**, J. and K. Spokas, 1993: Landfill CH<sub>4</sub>: rates, fates, and role in the global carbon cycle. *Chemosphere*, **26**(1-4), 369-386.
- Böhringer**, C., 1998: The synthesis of bottom-up and top-down in energy policy modeling. *Energy Economics*, **20**(3), 233-248.
- California Environmental Protection Agency**, 2003: *Environmental Technologies and Service Opportunities in the Baja California Peninsula*. International Affairs Unit, 95 pp.
- CIEEDAC** (Canadian Industrial Energy End-Use Data and Analysis Centre), 2005: *Development of Energy Intensity Indicators for Canadian Industry: 1990-2004*. Simon Fraser University, Vancouver, Canada, 166 pp.
- DOE**, (U.S. Department of Energy), 2006: Accessed on March 27, 2006, *Carbon Sequestration: Research and Development Overview*. Available at <http://www.fossil.energy.gov/programs/sequestration/overview.html>
- Edenhofer**, O., C. Carraro, J. Kohler, and M. Grubb, 2006: Endogenous technological change and the economics of atmospheric stabilisation. *The Energy Journal*, special issue, 284 pp.
- Edmonds**, J., J. Roop, and M. Scott, 2000: *Technology and the Economics of Climate Change Policy*. Prepared for the Pew Center on Climate Change by Battelle National Laboratories, 35 pp.

- Energy Information Administration**, 2005: *International Energy Outlook, 2005*, 186 pp.
- EPA** (Environmental Protection Agency), 2003a: *International Analysis of Methane and Nitrous Oxide Abatement Opportunities: Report to Energy Modeling Forum Working Group 21*. Environmental Protection Agency, Washington DC, 9 pp.
- EPA** (Environmental Protection Agency), 2003b: *Municipal Solid Waste in the United States: 2001 Facts and Figures*. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington DC, 170 pp.
- EPA** (Environmental Protection Agency), 2005. *Inventory of U.S. Greenhouse Gas Emissions and Sinks, 1990-2003*. Environmental Protection Agency, Office of Atmospheric Programs, Washington DC.
- EPIC** (Environment and Plastics Industry Council), 2002: *Opportunities for Reducing Greenhouse Gas Emissions through Residential Waste Management*. Environment and Plastics Industry Council, 34 pp.
- Grubb**, M., J.A. Edmonds, P. ten Brink, and M. Morrison, 1993: The cost of limiting fossil fuel CO<sub>2</sub> emissions: a survey and analysis. *Annual Review of Energy and the Environment*, **18**, 397-478.
- Grubb**, M., I. Kohler, and D. Anderson, 2002: Induced technical change in energy and environmental modeling: analytical approaches and policy implications. *Annual Review of Energy and the Environment*, **27**, 271-308.
- Frei**, C., P. Haldi, and G. Sarlos, 2003: Dynamic formulation of a top-down and bottom-up merging energy policy model. *Energy Policy*, **31(10)**, 1017-1031.
- Hershkowitz**, A., 1997: *Too Good to Throw Away: Recycling's Proven Record*. National Resources Defense Council, New York, February 1997, 86 pp.
- Herzog**, H., 1999: The economics of CO<sub>2</sub> capture. In: *Greenhouse Gas Control Technologies* [Reimer P., B. Eliasson, and A. Wokaum (eds.)]. Elsevier Science Ltd., Oxford, pp. 101-106.
- Humphreys**, K. and M. Mahasenan, 2002: *Toward A Sustainable Cement Industry - Substudy 8: Climate Change*. World Business Council for Sustainable Development (WBCSD), Geneva, Switzerland.
- IEA** (International Energy Agency), 2004: *Oil crisis and climate challenges: 30 Years of Energy Use in IEA Countries*. International Energy Agency, Paris, France. 211 pp.
- IEA** (International Energy Agency), 2006: *Energy Technology Perspectives 2006: Scenarios and Strategies to 2050*. International Energy Agency, Paris, France, 484 pp.
- IPCC**, 2001: *Climate Change, 2001: Mitigation*. Contribution of Working Group III to the Third Assessment Report of the Intergovernmental Panel on Climate Change [B. Metz (ed.)]. Cambridge University Press, Cambridge, United Kingdom, 752 pp
- Jaccard**, M., J. Nyboer, and B. Sadownik, 2002: *The Cost of Climate Policy*. University of British Columbia Press, Vancouver, British Columbia, Canada, 242 pp.
- Jaccard**, M., J. Nyboer, C. Bataille, and B. Sadownik, 2003a: Modeling the cost of climate policy: distinguishing between alternative cost definitions and long-run cost dynamics. *The Energy Journal*, **24(1)**, 49-73.
- Jaccard**, M., R. Loulou, A. Kanudia, J. Nyboer, A. Bailie, and M. Labriet, 2003b: Methodological contrasts in costing GHG abatement policies: optimization and simulation modeling of micro-economic effects in Canada. *European Journal of Operations Research*, **145(1)**, 148-164.
- Jacobsen**, H., 1998: Integrating the bottom-up and top-down approach to energy-economy modeling: the case of Denmark. *Energy Economics*, **20(4)**, 443-461.
- Jaffe**, A., R. Newell, and R. Stavins, 2002: Environmental policy and technological change. *Environmental and Resource Economics*, **22(1-2)**, 41-69.
- Keith**, D.W., and M. Ha-Duong, 2003: *CO<sub>2</sub> Capture From the Air: Technology Assessment and Implications for Climate Policy*. Proceedings of the 6th Greenhouse Gas Control Conference, Kyoto, Japan [J. Gale and Y. Kaya (eds.)]. Permagon Press, Oxford, United Kingdom, pp. 187-197.
- Kim**, Y. and E. Worrell, 2002: International comparison of CO<sub>2</sub> emissions trends in the iron and steel industry. *Energy Policy*, **30(10)**, 827-838.
- Koopmans**, C.C. and D.W. te Velde, 2001: Bridging the energy efficiency gap: using bottom-up information in a top-down energy demand model. *Energy Economics*, **23(1)**, 57-75.
- Löschel**, A., 2002: Technological change in economic models of environmental policy: a survey. *Ecological Economics*, **43(2-3)**, 105-126.
- Martin**, N., E. Worrell, M. Ruth, L. Price, R.N. Elliott, A.M. Shipley, and J. Thorne, 2001: *Emerging Energy-Efficient Industrial Technologies: New York State Edition*. LBNL Report Number 46990, American Council for an Energy-Efficient Economy (ACEEE), 195 pp.
- Matysek**, A., M. Ford, G. Jakeman, A. Gurney, K. Low, and B.S. Fisher, 2006: *Technology: Its role in economic development and climate change*. ABARE Research Report 06.6, Canberra, Australia.
- McFarland**, J., J. Reilly, and H. Herzog, 2004: Representing energy technologies in top-down economic models using bottom-up information. *Energy Economics*, **26(4)**, 685-707.
- McKittrick**, R., 1996: *The Economic Consequences of Taxing Carbon Emissions in Canada*. Department of Economics, University of British Columbia.
- Mohareb**, A.K., M. Warith, and R.M. Narbaitz, 2004: Strategies for the municipal solid waste sector to assist Canada in meeting its Kyoto Protocol commitments. *Environmental Review*, **12(2)**, 71-95.
- Morris**, S., G. Goldstein, and V. Fthenakis, 2002: NEMS and MARKAL-MACRO models for energy-environmental-economic analysis: a comparison of the electricity and carbon reduction projections. *Environmental Modeling and Assessment*, **7(3)**, 207-216.

- Newell**, R., A. Jaffe, and R. Stavins, 1999: The induced innovation hypothesis and energy-saving technological change. *Quarterly Journal of Economics*, **14(2)**, 941-975.
- Sands**, R., 2002: Dynamics of carbon abatement in the second generation model. *Energy Economics*, **26(4)**, 721-738.
- Schäfer**, A. and H. Jacoby, 2005: Technology detail in a multi-sector CGE model: transport under climate policy. *Energy Economics*, **27(1)**, 1-24.
- Statistics Canada**, 2004: *Human Activity and the Environment*. Statistics Canada, Cat no.16-201-XIE. Ottawa, Canada, 100 pp.
- Sutherland**, R., 2000: "No cost" efforts to reduce carbon emissions in the U.S.: an economic perspective. *Energy Journal*, **21(3)**, 89-112.
- Weyant**, J., H. Jacoby, J. Edmonds, and R. Richels (eds.), 1999: The costs of the Kyoto Protocol - a multi-model evaluation. *The Energy Journal*, special issue. 398 pp.
- WRI** (World Resources Institute), 2005: *Climate Analysis Indicators Tool (CAIT)*, Version 3.0, Washington, DC. Available at <http://cait.wri.org>
- Worrell**, E., L.K. Price, and C. Galitsky, 2004: *Emerging Energy-Efficient Technologies in Industry: Case Studies of Selected Technologies*. Environmental Technologies Division, Lawrence Berkeley Laboratory, University of California at Berkeley.
- CHAPTER 9 REFERENCES
- CEC** (California Energy Commission), 2005: *California's Water Energy Relationship*. Staff Final Report, California Energy Commission, Sacramento, CA, 174 pp.
- Chaudhari**, M., L. Frantzis, T.E. Hoff, 2004: *PV Grid Connected Market Potential in 2010 under a Cost Breakthrough Scenario*. 1174373. Navigant Consulting Inc. 93 pp.
- CONAFOVI** (Comisión Nacional de Fomento a la Vivienda), 2001: *Programa Sectorial de Vivienda 2001-2006*.
- DeCanio**, S., 1993: Barriers within firms to energy-efficient investments. *Energy Policy*, **21(9)**, 906-914.
- DeCanio**, S., 1994: Why do profitable energy-saving investment projects languish? *Journal of General Management*, **20(1)**, 62-71.
- DOE/EERE** (U.S. Department of Energy, Energy Efficiency and Renewable Energy), 2005: *2005 Buildings Energy Data Book*. Office of Energy Efficiency and Renewable Energy, Washington, DC.
- DOE/EERE** (U.S. Department of Energy, Energy Efficiency and Renewable Energy), 2006: *Building America Puts Residential Building Research to Work*. Washington, DC. Available at [http://www.eere.energy.gov/buildings/building\\_america/](http://www.eere.energy.gov/buildings/building_america/)
- DOE/EIA** (U.S. Department of Energy and Energy Information Administration), 2003: *Carbon Coefficients Used in Emissions of Greenhouse Gases in the United States*. Washington, DC. Available at <http://www.eia.doe.gov/oiaf/1605/ggrpt/pdf/tab6.1.pdf>
- DOE/EIA** (U.S. Department of Energy and Energy Information Administration), 2005: *Annual Energy Outlook 2005*. En-
- ergy Information Administration, EIA-0383(2005), Washington, DC, 136 pp.
- IEA** (International Energy Agency), 2005: *CO<sub>2</sub> Emissions from Fuel Combustion: 1971-2003*. International Energy Agency, OECD/IEA, Paris, France.
- INEGI** (Instituto Nacional de Estadística Geografía e Informática), 2005: *Censo general de población y vivienda 2005*. Mexico, D.F., 2005.
- Interlaboratory Working Group**, 2000: *Scenarios for a Clean Energy Future*. Oak Ridge National Laboratory, Oak Ridge, TN, 371 pp.
- Kinney**, B.R., S. Kim, J.D. Ryan, 2002: *The Federal Buildings Research and Development Program: A Sharp Tool for Climate Policy*. ACEEE Buildings Summer Study 2002, Pacific Grove. 11 vols.
- NRC** (Natural Resources Canada), 2005a: *Residential Sector Secondary Energy Use and GHG Emissions by End Use 2005*. Ottawa, Canada.
- NRC** (Natural Resources Canada), 2005b: *Office of Energy Efficiency National Energy Use Database 2005*. Ottawa, Canada. Available at [http://oeo.nrcan.gc.ca/corporate/statistics/neud/dpa/data\\_e/database\\_e.cfm](http://oeo.nrcan.gc.ca/corporate/statistics/neud/dpa/data_e/database_e.cfm)
- Public Technology Inc. and U.S. Green Building Council**, 1996: *Sustainable Building Technical Manual*. Washington D.C.,
- Rabl**, A., and J.V. Spadaro, 2007: *Environmental Impacts and Costs of Energy*, Chapter 4 in: *Handbook of Energy Efficiency and Renewable Energy*, [F. Krieth and Y. Goswami (eds)], CRC Press, New York.
- SENER México**, 2004: *Balance Nacional de Energía 2003*. Subsecretaría de Planeación Energética y Desarrollo Tecnológico. Secretaría de Energía, México D.F., 215 pp.
- SENER México**, 2005: *Secretaría de Energía—Sistema de Información Energética*. México D.F. Available at <http://sie.energia.gob.mx/sie/bdiController>
- USGBC** (U.S. Green Building Council), 2005: *LEED for New Construction—Rating System 2.2*. U.S. Green Building Council, LEED (NC) 2.2, Washington, DC, 416 pp.
- Wiel**, S., and J.E. McMahon, 2005: *Energy-Efficiency Labels and Standards: A Guidebook for Appliances, Equipment, and Lighting, 2nd Edition*. Collaborative Labeling and Standards Program, Washington, DC, 218 pp.

PART III OVERVIEW REFERENCES

- Bradley**, B.A., R.A. Houghton, J.F. Mustard, and S.P. Hamburg, 2006: Invasive grass reduces aboveground carbon stocks in shrublands of the Western US. *Global Change Biology*, **12(10)**, 1815-1822.
- Caspersen**, J.P., S.W. Pacala, J.C. Jenkins, G.C. Hurtt, P.R. Moorcroft, and R.A. Birdsey, 2000: Contributions of land-use history to carbon accumulation in United States forests. *Science*, **290(5494)**, 1148-1151.
- Davidson**, E.A., and I.A. Janssens, 2006: Temperature sensitivity of soil carbon decomposition and feedbacks to climate change. *Nature*, **440(7081)**, 165-173.

- Friedlingstein**, P., P. Cox, R. Betts, L. Bopp, W. von Bloh, V. Brovkin, P. Cadule, S. Doney, M. Eby, I. Fung, G. Bala, J. John, C. Jones, F. Joos, T. Kato, M. Kawamiya, W. Knorr, K. Lindsay, H.D. Matthews, T. Raddatz, P. Rayner, C. Reick, E. Roeckner, K.-G. Schnitzler, R. Schnur, K. Strassmann, A.J. Weaver, C. Yoshikawa, and N. Zeng, 2006: Climate-carbon cycle feedback analysis: results from the C4MIP model inter-comparison. *Journal of Climate*, **19(14)**, 3337–3353.
- Houghton**, R.A., J.L. Hackler, and K.T. Lawrence, 1999: The U.S. carbon budget: contributions from land-use change. *Science*, **285(5427)**, 574–578.
- Hurttt**, G.C., S.W. Pacala, P.R. Moorcroft, J. Caspersen, E. Sheviakova, R.A. Houghton, and B. Moore III, 2002: Projecting the future of the U.S. carbon sink. *Proceedings of the National Academy of Sciences*, **99(3)**, 1389–1394.
- Jones**, C., C. McConnell, K. Coleman, P. Cox, P. Falloon, D. Jenkinson, and D. Powlson, 2005: Global climate change and soil carbon stocks: predictions from two contrasting models for the turnover of organic carbon in soil. *Global Change Biology*, **11(1)**, 154–166.
- Lal**, R., 2001: Fate of eroded soil carbon: emission or sequestration. In: *Soil Carbon Sequestration and the Greenhouse Effect* [R. Lal (ed.)]. Soil Science Society of America Special Publication, vol. 57; Madison, Wisconsin, pp. 173–181.
- Osterkamp**, T.E., and V.E. Romanovsky, 1999: Evidence for warming and thawing of discontinuous permafrost in Alaska. *Permafrost and Periglacial Processes*, **10(1)**, 17–37.
- Osterkamp**, T.E., L. Viereck, Y. Shur, M.T. Jorgenson, C. Racine, A. Doyle, and R.D. Boone, 2000: Observations of thermokarst and its impact on boreal forests in Alaska, United States. *Arc-tic, Antarctic and Alpine Research*, **32(3)**, 303–315.
- Potter**, C., P. Tan, V. Kumar, C. Kucharik, S. Klooster, V. Genovese, W. Cohen, and S. Healey, 2005: Recent history of large-scale ecosystem disturbances in North America derived from the AVHRR satellite record. *Ecosystems*, **8(7)**, 808.
- Potter**, C., S. Klooster, P. Tan, M. Steinbach, V. Kumar, and V. Genovese, 2003: Variability in terrestrial carbon sinks over two decades: Part 1—North America. *Earth Interactions*, **7**, Paper 12.
- Prentice**, I.C., G.D. Farquhar, M.J.R. Fasham, M.L. Goulden, M. Heimann, V.J. Jaramillo, H.S. Kheshgi, C. Le Quéré, R.J. Scholes, and D.W.R. Wallace, 2001: The carbon cycle and atmospheric carbon dioxide. In: *Climate Change 2001: The Scientific Basis*. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change [J. T. Houghton, Y. Ding, D. J. Griggs, M. Noguer, P. J. van der Linden, X. Dai, K. Maskell, and C. A. Johnson (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, pp. 183–237.
- Schimel**, D., J. Melillo, H. Tian, A.D. McGuire, D. Kicklighter, T. Kittel, N. Rosenbloom, S. Running, P. Thornton, D. Ojima, W. Parton, R. Kelly, M. Sykes, R. Neilson, and B. Rizzo, 2000: Contribution of increasing CO<sub>2</sub> and climate to carbon storage by ecosystems in the United States. *Science*, **287(5460)**, 2004–2006.
- Smith**, L.C., Y. Sheng, G.M. MacDonald, L.D. Hinzman, 2005a: Disappearing Arctic Lakes. *Science*, **308(5727)**, 1429.
- Smith**, S.L., M.M. Burgess, and F.M. Nixon, 2001: Response of active layer and permafrost temperatures to warming during 1998 in the Mackenzie Delta, Northwest Territories and at Canadian Forces Station Alert and Baker Lake, Nunavut. *Geological Survey of Canada Current Research*, 2001-E5, 8 pp.
- Smith**, S.V., R.O. Sleezer, W.H. Renwick, and R.W. Buddemeier, 2005b: Fates of eroded soil organic carbon: Mississippi Basin case study. *Ecological Applications*, **15(6)**, 1929–1940.
- Stallard**, R.F., 1998: Terrestrial sedimentation and the carbon cycle: coupling weathering and erosion to carbon burial. *Global Biogeochemical Cycles*, **12(2)**, 231–257.
- Wienert**, A., 2006: From forestland to house lot: carbon stock changes and greenhouse gas emissions from exurban land development in central New Hampshire. Master's Thesis, Brown University, Providence, Rhode Island. 29 pp.

## CHAPTER 10 REFERENCES

- Ågren, G.I. and E. Bosatta, 2002: Reconciling differences in predictions of temperature response of soil organic matter. *Soil Biology and Biochemistry*, **34(1)**, 129–132.
- Agriculture and Agri-Food Canada**, 1999: The health of our air: toward sustainable agriculture in Canada. In: *Publication 1981/E* [Janzen, H.H., R.L. Desjardins, J.M.R. Asselin, and B. Grace (eds.)]. Agriculture and Agri-Foods Canada, Ottawa, Ontario, Canada, 40 pp.
- Antle**, J.M., S. Capalbo, S. Mooney, E.T. Elliott, and K. Paustian, 2001: Economic analysis of agricultural soil carbon sequestration: an integrated assessment approach. *Journal of Agricultural and Resource Economics*, **26(2)**, 344–367.
- Antle**, J.M., S.M. Capalbo, S. Mooney, D.K. Elliott, and K.H. Paustian, 2003: Spatial heterogeneity, contract design, and the efficiency of carbon sequestration policies for agriculture. *Journal of Environmental Economics and Management*, **46(2)**, 231–250.
- Bellamy**, P.H., P.J. Loveland, R.I. Bradley, R.M. Lark, and G.J.D. Kirk, 2005: Carbon losses from all soils across England and Wales 1978–2003. *Nature*, **437(7056)**, 245–248.
- Boadi**, D., C. Benchaar, J. Chiquette, and D. Masse, 2004: Mitigation strategies to reduce enteric methane emissions from dairy cows: Update review. *Canadian Journal of Animal Science*, **84(3)**, 319–335.
- Boehm**, M., B. Junkins, R. Desjardins, S.N. Kulshreshtha, and W. Lindwall, 2004: Sink potential of Canadian agricultural soils. *Climatic Change*, **65(3)**, 297–314.
- Bradley**, B.A., R.A. Houghton, J.F. Mustard, and S.P. Hamburg, 2006: Invasive grass reduces aboveground carbon stocks in shrublands of the Western US. *Global Change Biology*, **12(10)**, 1815–1822.

- Buyanovsky, G.A.** and G.H. Wagner, 1998: Carbon cycling in cultivated land and its global significance. *Global Change Biology*, **4(2)**, 131–141.
- CAST** (Council for Agricultural Science and Technology), 2004: *Climate Change and Greenhouse Gas Mitigation: Challenges and Opportunities for Agriculture*. [Paustian, K., B.A. Babcock, J. Hatfield, C.L. Kling, R. Lal, B.A. McCarl, S. McLaughlin, A.R. Mosier, W.M. Post, C.W. Rice, G.P. Robertson, N.J. Rosenberg, C. Rosenzweig, W.H. Schlesinger, and D. Zilberman (Task Force Members)]. CAST, Ames, IA, 120 pp.
- CISCC** (Comité Intersecretarial Sobre Cambio Climático), 2001: *Second National Communication of Mexico to the UN Framework Convention on Climate Change*. Secretaría de Medio Ambiente y Recursos Naturales: Instituto Nacional de Ecología, México, D.F. México 374 pp. Available at <http://unfccc.int/resource/docs/natc/mexnc2.pdf>
- Conant, R.T.**, S.J. Del Gross, W.J. Parton, and K. Paustian, 2005: Nitrogen pools and fluxes in grassland soils sequestering carbon. *Nutrient Cycling in Agroecosystems*, **71(3)**, 239–248.
- Conant, R.T.** and K. Paustian, 2002: Potential soil carbon sequestration in overgrazed grassland ecosystems. *Global Biogeochemical Cycles*, **16(4)**, 1143.
- Conant, R.T.**, K. Paustian, and E.T. Elliott, 2001: Grassland management and conversion into grassland: Effects on soil carbon. *Ecological Applications*, **11(2)**, 343–355.
- Cox, P.M.**, R.A. Betts, C.D. Jones, S.A. Spall, and I.J. Totterdell, 2000: Acceleration of global warming due to carbon-cycle feedbacks in a coupled climate model. *Nature*, **408(6809)**, 184–187.
- Davidson, E.A.** and I.L. Ackerman, 1993: Change in soil carbon inventories following cultivation of previously untilled soils. *Biogeochemistry*, **20(3)**, 161–193.
- Enquete Commission**, 1995: *Protecting our Green Earth: How to Manage Global Warming Through Environmentally Sound Farming and Preservation of the World's Forests*. Economica Verlag, Bonn, Germany, 683 pp.
- EPA** (U.S. Environmental Protection Agency), 2000: *Options for Reducing Methane Emissions Internationally*. USEPA #430-R-90-006, EPA, Washington, DC.
- EPA** (U.S. Environmental Protection Agency), 2005: *Greenhouse Gas Mitigation Potential in U.S. Forestry and Agriculture*. USEPA #430-R-05-006, EPA Office of Atmospheric Programs, Washington, DC, 154 pp. Available at [http://www.epa.gov/sequestration/greenhouse\\_gas.html](http://www.epa.gov/sequestration/greenhouse_gas.html)
- EPA** (U.S. Environmental Protection Agency), 2006: *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2004*. USEPA #430-R-06-002, EPA, Washington, DC, 459 pp. Available at [http://epa.gov/climatechange/emissions/usgginv\\_archive.html](http://epa.gov/climatechange/emissions/usgginv_archive.html)
- Eve, M.D.**, M. Sperow, K. Paustian, and R.F. Follett, 2002: National-scale estimation of changes in soil carbon stocks on agricultural lands. *Environmental Pollution*, **116(3)**, 431–438.
- Follett, R.F.**, J.M. Kimble, and R. Lal, 2001a: *The Potential of U.S. Grazing Lands to Sequester Carbon and Mitigate the Greenhouse Effect*. CRC Press, Chelsea, MI, 442 pp.
- Follett, R.F.**, E.G. Pruessner, S. Samson-Liebig, J.M. Kimble, and S. Waltman, 2001b: Carbon sequestration under the Conservation Reserve Program in the historical grassland soils of the United States of America. In: *Soil Management for Enhancing Carbon Sequestration* [Lal, R. and K. McSweeney (eds.)]. Soil Science Society of America, Madison, WI, pp. 1–14.
- Friedl, M.A.**, A.H. Strahler, X. Zhang, and J. Hodges, 2002: The MODIS land cover product: multi-attribute mapping of global vegetation and land cover properties from time series MODIS data. *Proceedings of the International Geoscience and Remote Sensing Symposium*, **4**, 3199–3201.
- Frye, W.W.**, 1984: Energy requirements in no-tillage. In: *No Tillage Agricultural Principles And Practices* [Phillips, R.E. and S.H. Phillips (eds.)]. Van Nostrand Reinhold, New York, pp. 127–151.
- Giardina, C.P.** and M.G. Ryan, 2000: Evidence that decomposition rates of organic carbon in mineral soil do not vary with temperature. *Nature*, **404(6780)**, 858–861.
- Gregorich, E.G.**, P. Rochette, A.J. VandenBygaart, and D.A. Angers, 2005: Greenhouse gas contributions of agricultural soils and potential mitigation practices in Eastern Canada. *Soil & Tillage Research*, **83(1)**, 53–72.
- Helgason, B. L.**, H.H. Janzen, M.H. Chantigny, C.F. Drury, B.H. Ellert, E.G. Gregorich, R.L. Lemke, E. Pattey, P. Rochette, and C. Wagner-Riddle, 2005: Toward improved coefficients for predicting direct N<sub>2</sub>O emissions from soil in Canadian agroecosystems. *Nutrient Cycling in Agroecosystems*, **72(1)**, 87–99.
- Houghton, R.A.** and C.L. Goodale, 2004: Effects of land-use change on the carbon balance of terrestrial ecosystems. In: *Ecosystems and Land Use Change* [DeFries, R.S., G. P. Asner, and R.A. Houghton (eds.)]. Geophysical Monograph Series 153, American Geophysical Union, Washington DC, pp 85–98.
- Houghton, R. A.**, J.L. Hackler, and K.T. Lawrence, 1999: The U.S. carbon budget: contributions from land-use change. *Science*, **285(5427)**, 574–578.
- IPCC**, 2001: *Third Assessment Report*. Cambridge University Press, Cambridge, United Kingdom, 87 pp.
- ISRIC** (International Soil Reference and Information Centre) 2002: *FAO Soil Database*. CD ROM, Rome, Italy.
- Jackson, R.B.**, J.L. Banner, E.G. Jobbagy, W.T. Pockman, and D.H. Wall, 2002: Ecosystem carbon loss with woody plant invasion of grasslands. *Nature*, **418(6898)**, 623–626.
- Jenkinson, D.S.**, D.E. Adams, and A. Wild, 1991: Model estimates of CO<sub>2</sub> emissions from soil in response to global warming. *Nature*, **351(6324)**, 304–306.
- Johnson, K.A.** and D.E. Johnson, 1995: Methane emissions from cattle. *Journal of Animal Science*, **73(8)**, 2483–2492.
- Kätterer, T.**, M. Reichstein, O. Andren, and A. Lomander, 1998: Temperature dependence of organic matter decomposition: a critical review using literature data analyzed with different models. *Biology and Fertility of Soils*, **27(3)**, 258–262.

- Keppler**, F., J.T.G. Hamilton, M. Brass, and T. Rockmann, 2006: Methane emissions from terrestrial plants under aerobic conditions. *Nature*, **439**(7073), 187–191.
- Knorr**, W., I.C. Prentice, J.I. House, and E.A. Holland, 2005: Long-term sensitivity of soil carbon turnover to warming. *Nature*, **433**(7023), 298–301.
- Kulshreshtha**, S.N., B. Junkins, and R. Desjardins, 2000: Prioritizing greenhouse gas emission mitigation measures for agriculture. *Agricultural Systems*, **66**(3), 145–166.
- Lal**, R., 2002: Why carbon sequestration in agricultural soils? In: *Agricultural Practices and Policies for Carbon Sequestration in Soil* [Kibble, J., R. Lal, and R.F. Follett (eds.)]. CRC Press, Boca Raton, FL, pp. 21–30.
- Lal**, R., 2004: Carbon emission from farm operations. *Environment International*, **30**(7), 981–990.
- Lal**, R., R.F. Follett, and J.M. Kimble, 2003: Achieving soil carbon sequestration in the United States: a challenge to policy makers. *Soil Science*, **168**, 827–845.
- Lal**, R., J.M. Kimble, R.F. Follett, and C.V. Cole, 1998: *The Potential of U.S. Cropland to Sequester Carbon and Mitigate the Greenhouse Effect*. Ann Arbor Press, Chelsea, MI, 128 pp.
- Lewandrowski**, J., M. Peters, C. Jones, R. House, M. Sperow, M.D. Eve, and K. Paustian, 2004: *Economics of Sequestering Carbon in the U.S. Agricultural Sector*. Technical Bulletin No. TB 1909, Economic Research Service, Washington, DC.
- Long**, S.P., E.A. Ainsworth, A.D.B. Leakey, J. Nösberger and D.R. Ort, 2006: Food for thought: lower-than-expected crop yield stimulation with rising CO<sub>2</sub> concentrations. *Science*, **312**(5782), 1918–1921.
- Lynch**, D.H., R.D.H. Cohen, A. Fredeen, G. Patterson, and R.C. Martin, 2005: Management of Canadian prairie region grazed grasslands: Soil C sequestration, livestock productivity and profitability. *Canadian Journal of Soil Science*, **85**(2), 183–192.
- Matin**, A., P. Collas, D. Blain, C. Ha, C. Liang, L. MacDonald, S. McKibbon, C. Palmer, and R. Kerry, 2004: *Canada's Greenhouse Gas Inventory: 1990–2002*. Greenhouse Gas Division, Environment Canada, 13 pp.
- Ministry of the Environment**, 2006: National Inventory Report. In: *Trends in GHG Sources and Sinks in Canada, 1990-2004*. Greenhouse Gas Division, Environment Canada, 16 pp..
- McCarl**, B.A. and E.K. Schneider, 2001: The Cost of Greenhouse Gas Mitigation in U.S. Agriculture and Forestry. *Science*, **294**(5551), 2481–2482.
- Mosier**, A., C. Kroese, C. Nevison, O. Oenema, S. Seitzinger, and O. van Cleemput, 1998a: Closing the global N<sub>2</sub>O budget: nitrous oxide emissions through the agricultural nitrogen cycle - OECD/IPCC/IEA phase II development of IPCC guidelines for national greenhouse gas inventory methodology. *Nutrient Cycling in Agroecosystems*, **52**(2-3), 225–248.
- Mosier**, A.R., J.M. Duxbury, J.R. Freney, O. Heinemeyer, K. Minami, and D.E. Johnson, 1998b: Mitigating agricultural emissions of methane. *Climatic Change*, **40**(1), 39–80.
- Murray**, B.C., B.A. McCarl, and H.C. Lee, 2004: Estimating leakage from forest carbon sequestration programs. *Land Economics*, **80**(1), 109–124.
- Nabuurs**, G.-J., N.H. Ravindranath, K. Paustian, A. Freibauer, B. Hohenstein, W. Makundi, H. Aalde, A.Y. Abdelgadir, S.A.K. Anwar, J. Barton, K. Bickel, S. Bin-Musa, D. Blain, R. Boer, K. Byrne, C.C. Cerri, L. Ciccarese, D.-C. Choque, E. Duchemin, L. Dja, J. Ford-Robertson, W. Galinski, J.C. Germon, H. Ginzo, M. Gytrasky, L. Heath, D. Loustau, T. Mandouri, J. Mindas, K. Pingoud, J. Raison, V. Savchenko, D. Schone, R. Sievanen, K. Skog, K.A. Smith, D. Xu, M. Bakker, M. Bernoux, J. Bhatti, R.T. Conant, M.E. Harmon, Y. Hirakawa, T. Iehara, M. Ishizuka, E.G. Jobbagy, J. Laine, M. van der Merwe, I.K. Murthy, D. Nowak, S.M. Ogle, P. Sudha, R.J. Scholes, and X. Zhang, 2004: LUCF-sector good practice guidance. In: *IPCC Good Practice Guidance for LULUCF* [Penman, J., M. Gytrasky, T. Hirishi, T. Krug, and D. Kruger (eds.)]. Institute for Global Environmental Strategies, Hayama, Japan.
- NAS** (National Academy of Sciences), 2001: *Climate Change Science: An Analysis of Some Key Questions*. NAS, Committee on the Science of Climate Change, National Research Council, Washington, DC. 29 pp.
- Nowak**, R.S., D.S. Ellsworth, and S.D. Smith, 2004: Functional responses of plants to elevated atmospheric CO<sub>2</sub>- do photosynthetic and productivity data from FACE experiments support early predictions? *New Phytologist*, **162**(2), 253–280.
- NRCS** (Natural Resources Conservation Service), 2005: *Anaerobic Digestion Practice Standards*. U.S. Department of Agriculture, Washington, DC.
- Ogle**, S.M., F.J. Breidt, M.D. Eve, and K. Paustian, 2003: Uncertainty in estimating land use and management impacts on soil organic carbon storage for U.S. agricultural lands between 1982 and 1997. *Global Change Biology*, **9**(11), 1521–1542.
- Ogle**, S.M., R.T. Conant, and K. Paustian, 2004: Deriving grassland management factors for a carbon accounting method developed by the Intergovernmental Panel on Climate Change. *Environmental Management*, **33**(4), 474–484.
- Pacala**, S.W., G.C. Hurtt, D. Baker, P. Peylin, R.A. Houghton, R.A. Birdsey, L. Heath, E.T. Sundquist, R.F. Stallard, P. Ciais, P. Moorcroft, J.P. Caspersen, E. Shevliakova, B. Moore, G. Kohlmaier, E. Holland, M. Gloor, M.E. Harmon, S.M. Fan, J.L. Sarmiento, C.L. Goodale, D. Schimel, and C.B. Field, 2001: Consistent land- and atmosphere-based U.S. carbon sink estimates. *Science*, **292**(5525), 2316–2320.
- Paustian**, K., O. Andren, H.H. Janzen, R. Lal, P. Smith, G. Tian, H. Tiessen, M. Van Noordwijk, and P.L. Woomer, 1997: Agricultural soils as a sink to mitigate CO<sub>2</sub> emissions. *Soil Use and Management*, **13**(s4), 230–244.
- Paustian**, K., J.M. Antle, J. Sheehan, and E.A. Paul, 2006: *Agriculture's Role in Greenhouse Gas Mitigation*. Pew Center on Global Climate Change, Washington, DC, 76 pp.
- Paustian**, K., C.V. Cole, D. Sauerbeck, and N. Sampson, 1998: CO<sub>2</sub> mitigation by agriculture: an overview. *Climatic Change*, **40**(1), 135–162.

- Peoples**, M.B., E.W. Boyer, K.W.T. Goulding, P. Heffer, V.A. Ochwoh, B. Vanlauwe, S. Wood, K. Yagi, and O. van Cleemput, 2004: Pathways of nitrogen loss and their impacts on human health and the environment. In: *Agriculture and the Nitrogen Cycle* [Mosier, A.R., J.K. Syers, and J.R. Freney (eds.)]. Island Press, Washington, DC, pp. 53–69.
- Pimentel**, D., P. Hepperly, J. Hanson, D. Douds, and R. Seidel, 2005: Environmental, energetic, and economic comparisons of organic and conventional farming systems. *Bioscience*, **55**(7), 573–582.
- Post**, W.M. and K.C. Kwon, 2000: Soil carbon sequestration and land-use change: processes and potential. *Global Change Biology*, **6**(3), 317–327.
- Raymond**, P.A. and J.J. Cole, 2003: Increase in the export of alkalinity from North America's largest river. *Science*, **301**, 88–91.
- Reilly**, J.M. and K.O. Fuglie, 1998: Future yield growth in field crops: what evidence exists? *Soil Tillage Research*, **47**, 275–290.
- Robertson**, G.P. and P.R. Grace, 2004: Greenhouse gas fluxes in tropical and temperate agriculture: the need for a full-cost accounting of global warming potentials. *Environment, Development and Sustainability*, **6**, 51–63.
- Robertson**, G.P., E.A. Paul, and R.R. Harwood, 2000: Greenhouse gases in intensive agriculture: contributions of individual gases to the radiative forcing of the atmosphere. *Science*, **289**(5486), 1922–1925.
- Sheinbaum**, C. and O. Masera, 2000: Mitigating carbon emissions while advancing national development priorities: the case of Mexico. *Climatic Change*, **47**(3), 259–282.
- Six**, J., S.M. Ogle, F.J. Briedt, R.T. Conant, A.R. Mosier, and K. Paustian, 2004: The potential to mitigate global warming with no-tillage management is only realized when practiced in the long term. *Global Change Biology*, **10**(2), 155–160.
- Smith**, K.A. and F. Conen, 2004: Impacts of land management on fluxes of trace greenhouse gases. *Soil Use and Management*, **20**, 255–263.
- Smith**, P., K.W. Goulding, K.A. Smith, D.S. Powlson, J.U. Smith, P. Falloon, and K. Coleman, 2001: Enhancing the carbon sink in European agricultural soils: including trace gas flux estimates of carbon mitigation potential. *Nutrient Cycling in Agro-ecosystems*, **60**(1-3), 237–252.
- Smith**, S.V., R.O. Sleezer, W.H. Renwick, and R.W. Buddemeier, 2005: Fates of eroded soil organic carbon: Mississippi basin case study. *Ecological Applications*, **15**(6), 1929–1940.
- Sobool**, D. and S. Kulshreshtha, 2005: *Greenhouse Gas Emissions from Agriculture and Agri-Food Systems in Canada*. Department of Agricultural Economics, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 156 pp.
- Sombroek**, W.G., F.O. Nachtergael, and A. Hebel, 1993: Amounts, dynamics and sequestering of carbon in tropical and subtropical soils. *Ambio*, **22**(7), 417–426.
- Sperow**, M., M.D. Eve, and K. Paustian, 2003: Potential soil C sequestration on U.S. agricultural soils. *Climatic Change*, **57**(3), 319–339.
- Van Auken**, O.W., 2000: Shrub invasions of North American semiarid grasslands. *Annual Review of Ecology and Systematics*, **31**, 197–205.
- VandenBygaart**, A.J., E.G. Gregorich, and D.A. Angers, 2003: Influence of agricultural management on soil organic carbon: A compendium and assessment of Canadian studies. *Canadian Journal of Soil Science*, **83**(4), 363–380.
- West**, T.O. and G. Marland, 2003: Net carbon flux from agriculture: Carbon emissions, carbon sequestration, crop yield, and land-use change. *Biogeochemistry*, **63**(1), 73–83.
- West**, T.O., G. Marland, A.W. King, W.M. Post, A.K. Jain, and K. Andrasko, 2004: Carbon management response curves: estimates of temporal soil carbon dynamics. *Environmental Management*, **33**(4), 507–518.
- Yoo**, K., R. Amundson, A.M. Heimsath, and W.E. Dietrich, 2005: Erosion of upland hillslope soil organic carbon: coupling field measurements with a sediment transport model. *Global Biogeochemical Cycles*, **19**(3), GB3003, doi:10.1029/2004GB002271.

## **CHAPTER II REFERENCES**

- Aber**, J., R.P. Neilson, S. McNulty, J.M. Lenihan, D. Bachelet, and R.J. Drapek, 2001: Forest processes and global change: predicting the effects of individual and multiple stressors. *BioScience* **51**(9), 735–751.
- Albrecht**, A. and S.T. Kandji, 2003: Carbon sequestration in tropical agroforestry systems. *Agriculture, Ecosystems and Environments*, **99**(1-3), 15–27.
- Amiro**, B.D., J.B. Todd, B.M. Wotton, K.A. Logan, M.D. Flanagan, B.J. Stocks, J.A. Mason, D.L. Martell and K.G. Hirsch, 2001: Direct carbon emissions from Canadian forest fires, 1959–1999. *Canadian Journal of Forest Research*, **31**(3), 512–525.
- Apps**, M.J., W.A. Kurz, S.J. Beukema, and J.S. Bhatti, 1999: Carbon budget of the Canadian forest product sector. *Environmental Science & Policy*, **2**(1), 25–41.
- Bachelet**, D., R.P. Neilson, J.M. Lenihan, and R.J. Drapek, 2001: Climate change effects on vegetation distribution and carbon budget in the United States. *Ecosystems*, **4**(3), 164–185.
- Baldocchi**, D.D. and J.S. Amthor, 2001: Canopy photosynthesis: history, measurements and models. In: *Terrestrial Global Productivity* [Roy, J., B. Saugier, and H. Mooney (eds.)]. Academic Press, San Diego, CA, pp. 9–31.
- Barford**, C.C., S.C. Wofsy, M.L. Goulden, J.W. Munger, E.H. Pyle, S.P. Urbanski, L. Hutyra, S.R. Saleska, D. Fitzjarrald, and K. Moore, 2001: Factors controlling long- and short-term sequestration of atmospheric CO<sub>2</sub> in a mid-latitude forest. *Science*, **294**(5547), 1688–1691.
- Bechtold**, W.A. and P.L. Patterson (eds.), 2005: *The Enhanced Forest Inventory and Analysis Program - National Sampling Design and Estimation Procedures*. General Technical Report SRS-80, U.S. Department of Agriculture, Forest Service, Southern Research Station, Asheville, NC, 85 pp.

- Birdsey, R.A.** and L.S. Heath, 1995: Carbon changes in U.S. forests. In: *Productivity Of America's Forests and Climate Change* [Joyce, L.A. (ed.)]. General Technical Report RM-GTR-271, U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO, pp. 56-70.
- Birdsey, R.A.**, R. Alig, and D. Adams, 2000: Mitigation activities in the forest sector to reduce emissions and enhance sinks of greenhouse gases. In: *The Impact of Climate Change on America's Forests: A Technical Document Supporting the 2000 USDA Forest Service RPA Assessment* [Joyce, L.A. and R.A. Birdsey (eds.)]. RMRS-GTR-59, U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fort Collins, CO, pp. 112-131.
- Birdsey, R.A.**, 2004: Data gaps for monitoring forest carbon in the United States: an inventory perspective. In: *Environmental Management* [Mickler, R.A. (ed.)]. **33(Suppl. 1)**, S1-S8.
- Birdsey, R.A.** and G.M. Lewis, 2003: Current and historical trends in use, management, and disturbance of U.S. forestlands. In: *The Potential of U.S. Forest Soils to Sequester Carbon and Mitigate the Greenhouse Effect* [Kimbble, J.M., L.S. Heath, and R.A. Birdsey (eds.)]. CRC Press LLC, New York, pp. 15-33.
- Birdsey, R.**, K. Pregitzer, and A. Lucier, 2006: Forest carbon management in the United States, 1600-2100. *Journal of Environmental Quality*, **35(4)**, 1461-1469.
- Caldeira, K.**, M.G. Morgan, D. Baldocchi, P.G. Brewer, C.-T.A. Chen, G.-J. Nabuurs, N. Nakicenovic, and G.P. Robertson, 2004: A portfolio of carbon management options. In: *The Global Carbon Cycle: Integrating Humans, Climate, and the Natural World* [Field, C.B. and M.R. Raupach (eds.)]. Island Press, Washington, DC, pp. 103-129.
- Canadian Forest Service**, 2005: *State of the Forest Report, 2004-2005*. Canadian Forest Service, Natural Resources Canada, Ottawa, Ontario, Canada. Available at [http://www.nrcan-rncan.gc.ca/cfs-scf/national/what-quoi/sof/latest\\_e.html](http://www.nrcan-rncan.gc.ca/cfs-scf/national/what-quoi/sof/latest_e.html)
- Caspersen, J.P.**, S.W. Pacala, J.C. Jenkins, G.C. Hurtt, P.R. Moorcroft, and R.A. Birdsey, 2000: Contributions of land-use history to carbon accumulation in U.S. forests. *Science*, **290(5494)**, 1148-1151.
- Chen, J.M.**, W. Ju, J. Cihlar, D. Price, J. Liu, W. Chen, J. Pan, A. Black, and A. Barr, 2003: Spatial distribution of carbon sources and sinks in Canada's forests. *Tellus B*, **55(2)**, 622-641.
- Dale, V.H.**, L.A. Joyce, S. McNulty, R.P. Neilson, M.P. Ayres, M.D. Flannigan, P.J. Hanson, L.C. Irland, A.E. Lugo, C.J. Peterson, D. Simberloff, F.J. Swanson, B.J. Stocks, and B. Wotton, 2001: Climate change and forest disturbances. *Bioscience*, **51(9)**, 723-734.
- De Jong, B.H.J.**, S. Ochoa-Gaona, M.A. Castillo-Santiago, N. Ramirez-Marcial, and M.A. Cairns, 2000: Carbon fluxes and patterns of land-use/land-cover change in the Selva Lacandona, Mexico. *Ambio*, **29(8)**, 504-511.
- Environment Canada**, 2006: *National Inventory Report, 1990-2004: Greenhouse Gas Sources and Sinks in Canada*, Environment Canada, Ottawa, Ontario. Available at [http://unfccc.int/national\\_reports/annex\\_i\\_ghg\\_inventories/national\\_inventories\\_submissions/items/3734.php](http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/3734.php)
- EPA** (U.S. Environmental Protection Agency), 2005: *Greenhouse Gas Mitigation Potential in U.S. Forestry and Agriculture*. EPA, Washington, DC, 154 pp.
- Finzi, A.C.**, D.J.P. Moore, E.H. DeLucia, J. Lichter, K.S. Homanckel, R.P. Jackson, H.-S. Kim, R. Matamala, H.R. McCarthy, R. Oren, J.S. Pippen, and W.H. Schlesinger, 2006: Progressive nitrogen limitation of ecosystem processes under elevated CO<sub>2</sub> in a warm-temperate forest. *Ecology*, **87(1)**, 15-25.
- Flannigan, M.D.**, K.A. Logan, B.D. Amiro, W.R. Skinner, and B.J. Stocks, 2005: Future area burned in Canada. *Climatic Change*, **72(1-2)**, 1-16.
- Foley, J.A.** and N. Ramankutty, 2004: A primer on the terrestrial carbon cycle: what we don't know but should. In: *The Global Carbon Cycle: Integrating Humans, Climate and the Natural World*. [Field, C.B. and M.R. Raupach, (eds.)] Island Press, Washington DC, pp. 279-294.
- FAO** (Food and Agriculture Organization), 2001: *Global Forest Resources Assessment 2000. Main Report*. FAO Forestry Paper 140, Rome, Italy, 481 pp.
- Goetz, S.J.**, A.G. Bunn, G.J. Fiske, and R.A. Houghton, 2005: Satellite-observed photosynthetic trends across boreal North America associated with climate and fire disturbance. *Proceedings of the National Academy of Sciences*, **102(38)**, 13521-13525.
- Goodale, C.L.**, M.J. Apps, R.A. Birdsey, C.B. Field, L.S. Heath, R.A. Houghton, J.C. Jenkins, G.H. Kohlmaier, W. Kurz, S. Liu, G.-J. Nabuurs, S. Nilsson, and A.Z. Shvidenko, 2002: Forest carbon sinks in the Northern Hemisphere. *Ecological Applications*, **12(3)**, 891-899.
- Haynes, R.W.** (ed.), 2003: *An Analysis of the Timber Situation in the United States: 1952-2050*. General Technical Report PNW-GTR-560, U.S. Department of Agriculture, Forest Service, Portland, OR, 254 pp.
- Heath, L.S.** and J.E. Smith, 2004: Criterion 5, indicator 26: total forest ecosystem biomass and carbon pool, and if appropriate, by forest type, age class and successional change. In: *Data Report: A Supplement to the National Report on Sustainable Forests—2003* [Darr, D.R. (coord.)]. FS-766A, U.S. Department of Agriculture, Washington, DC, 14 pp. Available at <http://www.fs.fed.us/research/sustain/contents.htm>
- Heath, L.S.** and J. E. Smith, 2000: An assessment of uncertainty in forest carbon budget projections. *Environmental Science & Policy*, **3(2-3)**, 73-82.
- Hogg, E.H.** and P.Y. Bernier, 2005: Climate change impacts on drought-prone forests in western Canada. *Forestry Chronicle*, **81(5)**, 675-682.
- Houghton, R.A.**, J.L. Hackler, and K.T. Lawrence, 1999: The U.S. carbon budget: contributions from land-use change, *Science*, **285(5427)**, 574-578.
- Johnson, D.W.**, R.B. Thomas, K.L. Griffen, and D.T. Tissue, J.T. Ball, B.R. Strain, and R.F. Walker, 1998: Effects of carbon di-

- oxide and nitrogen on growth and nitrogen uptake in ponderosa and loblolly pine. *Journal of Environmental Quality*, **27**, 414-425.
- Johnston, M.** and T. Williamson, 2005: Climate change implications for stand yields and soil expectation values: a northern Saskatchewan case study. *Forestry Chronicle*, **81**, 683-690.
- Joyce, L.**, J. Baer, S. McNulty, V. Dale, A. Hansen, L. Irland, R. Neilson, and K. Skog, 2001: Potential consequences of climate variability and change for the forests of the United States. In: *Climate Change Impacts in the United States*. Report for the U.S Global Change Research Program. Cambridge University Press, Cambridge, United Kingdom, pp. 489-521.
- Karnosky, D.F.**, D.R. Zak, K.S. Pregitzer, C.S. Awmack, J.G. Bockheim, R.E. Dickson, G.R. Hendrey, G.E. Host, J.S. King, B.J. Kopper, E.L. Kruger, M.E. Kubiske, R.L. Lindroth, W.J. Mattson, E.P. McDonald, A. Noormets, E. Oksanen, W.F.J. Parsons, K.E. Percy, G.K. Podila, D.E. Riemschneider, P. Sharma, R. Thakur, A. Söber, J. Söber, W.S. Jones, S. Anttonen, E. Vapaavuori, B. Mankovska, W. Heilman, J.G. Isebrands, 2003: Tropospheric ozone moderates responses of temperate hardwood forests to elevated CO<sub>2</sub>: a synthesis of molecular to ecosystem results from the Aspen FACE project. *Functional Ecology*, **17(3)**, 289-304.
- Körner, C.**, 2000: Biosphere responses to CO<sub>2</sub> enrichment. *Ecological Applications*, **10(6)**, 1590-1619.
- Körner, C.**, R. Asshoff, O. Bignucolo, S. Hättenschwiler, S.G. Keel, S. Peláez-Riedl, S. Pepin, R.T.W. Siegwolf, and G. Zotz, 2005: Carbon flux and growth in mature deciduous forest trees exposed to elevated CO<sub>2</sub>. *Science*, **309(5739)**, 1360-1362.
- Kurz, W.A.**, M.J. Apps, T.M. Webb, and P.J. McNamee, 1992: *The Carbon Budget of the Canadian Forest Sector: Phase 1*. Information Report NOR-X-326, Forestry Canada, Northern Forestry Centre, Edmonton, Alberta, Canada, 93pp.
- Kurz, W.A.**, S. Beukema, and M.J. Apps, 1998: Carbon budget implications of the transition from natural to managed disturbance regimes in forest landscapes. *Mitigation and Adaptation Strategies for Global Change*, **2(4)**, 405-421.
- Kurz, W.A.** and M.J. Apps, 1999: A 70-year retrospective analysis of carbon fluxes in the Canadian forest sector. *Ecological Applications*, **9(2)**, 526-547.
- Kurz, W.**, M. Apps, E. Banfield, and G. Stinson, 2002: Forest carbon accounting at the operational scale. *The Forestry Chronicle*, **78**, 672-679.
- Leenhouts, B.**, 1998: Assessment of biomass burning in the conterminous United States. *Conservation Ecology*, **2(1)**, 1.
- Lewandrowski, J.**, M. Sperow, M. Peters, M. Eve, C. Jones, K. Paustian, and R. House, 2004: *Economics of Sequestering Carbon in the U.S. Agricultural Sector*. Technical Bulletin 1909, U.S. Department of Agriculture, Economic Research Service, Washington, DC, 61 pp.
- Lichter, J.**, S.H. Barron, C.E. Bevacqua, A.C. Finzi, K.F. Irving, E.A. Stemmler, and W.H. Schlesinger, 2005: Soil carbon sequestration and turnover in a pine forest after six years of atmospheric CO<sub>2</sub> enrichment. *Ecology*, **86(7)**, 1835-1847.
- Lippke, B.**, J. Wilson, J. Perez-Garcia, J. Bowyer, and J. Miel, 2004: CORRIM: Life cycle environmental performance of renewable building materials. *Forest Products Journal*, **54(6)**, 8-19.
- Loya, W.M.**, K.S. Pregitzer, N.J. Karberg, J.S. King, and C.P. Giardina, 2003: Reduction of soil carbon formation by tropospheric ozone under increased carbon dioxide levels. *Nature*, **425(6959)**, 705-707.
- Masera, O.**, M.J. Ordóñez, and R. Dirzo, 1997: Carbon emissions from Mexican forests: the current situation and long-term scenarios. *Climatic Change*, **35(3)**, 265-295.
- Masera, O.**, A. Delia Cerón, and A. Ordóñez, 2001: Forestry mitigation options for Mexico: finding synergies between national sustainable development priorities and global concerns. *Mitigation and Adaptation Strategies for Global Change*, **6(3-4)**, 291-312.
- McNulty, S.G.**, 2002: Hurricane impacts on U.S. forest carbon sequestration. *Environmental Pollution*, **116(Supplement 1)**, S17-S24.
- Nair, P.K.R.** and V.D. Nair, 2003: Carbon storage in North American agroforestry systems. In: *The Potential of U.S. Forest Soils to Sequester Carbon and Mitigate the Greenhouse Gas Effect*. [Kimbler, J., L.S. Heath, R.A. Birdsey, and R. Lal (eds.)]. CRC Press, Boca Raton, FL, pp. 333-346.
- NRCan** (Natural Resources Canada), 2005: *The State of Canada's Forests*. Canadian Forest Service, NRC, Ottawa, Ontario, Canada. Available at [http://www.nrcan-rncan.gc.ca/cfs-scf/national/what-quoi/sof/latest\\_e.html](http://www.nrcan-rncan.gc.ca/cfs-scf/national/what-quoi/sof/latest_e.html)
- Neilson, R.P.**, I.C. Prentice, B. Smith, T.G.F. Kittel, and D. Viner, 1998: Simulated changes in vegetation distribution under global warming. In: *The Regional Impacts of Climate Change: An Assessment of Vulnerability* [Watson, R.T., M.C. Zinyowera, R.H. Moss, and D.J. Dokken (eds.)]. Cambridge University Press, Cambridge, United Kingdom, pp. 439-456.
- Nelson, K.C.** and B.H.J. de Jong, 2003: Making global initiatives local realities: carbon mitigation projects in Chiapas, Mexico. *Global Environmental Change*, **13(1)**, 19-30.
- NFDP** (National Forestry Database Program), 2005: *Compendium of Canadian Forestry Statistics*. National Forestry Database Program, Canadian Council of Forest Ministers, Ottawa, Ontario, Canada. Available at [http://nfdp.cccfm.org/compendium/index\\_e.php](http://nfdp.cccfm.org/compendium/index_e.php)
- Norby, R.J.**, E.H. DeLucia, B. Gielen, C. Calfapietra, C.P. Giardina, J.S. King, J. Ledford, H.R. McCarthy, D.J.P. Moore, R. Ceulemans, P. De Angelis, A.C. Finzi, D.F. Karnosky, M.E. Kubiske, M. Lukac, K.S. Pregitzer, G.E. Scarascia-Mugnozza, W.H. Schlesinger, and R. Oren, 2005: Forest response to elevated CO<sub>2</sub> is conserved across a broad range of productivity. *Proceedings of the National Academy of Sciences*, **102(50)**, 18052-18056.
- Nowak, R.S.**, D.S. Ellsworth, and S.D. Smith, 2004: Functional responses of plants to elevated atmospheric CO<sub>2</sub>- do photosynthetic and productivity data from FACE experiments support early predictions? *New Phytologist*, **162(2)**, 253-280.

- Ollinger, S.V., J.D. Aber, P.B. Reich, and R.J. Freuder,** 2002: Interactive effects of nitrogen deposition, tropospheric ozone, elevated CO<sub>2</sub> land use history on the carbon dynamics of northern hardwood forests. *Global Change Biology*, **8(6)**, 545-562.
- Oren, R., D.S. Ellsworth, K.H. Johnsen, N. Phillips, B.E. Ewers, C. Maier, K.V.R. Schäfer, H. McCarthy, G. Hendrey, S.G. McNulty, and G.G. Katul,** 2001: Soil fertility limits carbon sequestration by forest ecosystems in a CO<sub>2</sub>-enriched atmosphere. *Nature*, **411(6836)**, 469-472.
- Osher, L.J., P.A. Matson, and R. Amundson,** 2003: Effect of land use change on soil carbon in Hawaii. *Biogeochemistry*, **65(2)**, 213-232.
- Pacala, S.W., G.C. Hurtt, D. Baker, P. Peylin, R.A. Houghton, R.A. Birdsey, L. Heath, E.T. Sundquist, R.F. Stallard, P. Ciais, P. Moorcroft, J.P. Caspersen, E. Shevliakova, B. Moore, G. Kohlmaier, E. Holland, M. Gloor, M.E. Harmon, S.M. Fan, J.L. Sarmiento, C.L. Goodale, D. Schimel, and C.B. Field,** 2001: Consistent land- and atmosphere-based U.S. carbon sink estimates. *Science*, **292(5525)**, 2316-2320.
- Palacio-Prieto, J.L., G. Bocco, A. Velázquez, J.-F. Mas, F. Takaki-Takaki, A. Victoria, L. Luna-González, G. Gómez-Rodríguez, J. López-García, M.P. Muñoz, I. Trejo-Vázquez, A.P. Higuera, J. Prado-Molina, A. Rodriguez-Aguilar, R. Mayorga-Saucedo, and F.G. Medrano,** 2000: La condición actual de los recursos forestales en México: resultados del Inventario Forestal Nacional 2000. *Investigaciones Geográficas, Boletín del Instituto de Geografía, UNAM*, **43**, 183-203.
- Pan, Y., J. Melillo, A.D. McGuire, D. Kicklighter, L.F. Pitelka, K.A. Hibbard, L.L. Pierce, S.W. Running, D.S. Ojima, W.J. Parton, and D.S. Schimel,** 1998: Modeled responses of terrestrial ecosystems to elevated atmospheric CO<sub>2</sub>: a comparison of simulations by the biogeochemistry models of the Vegetation/Ecosystem Modeling and Analysis Project (VEMAP). *Oecologia*, **114(4)**, 389-404.
- Parisién, M.-A., V. Kafka, N. Flynn, K.G. Hirsch, J.B. Todd, and M.D. Flannigan,** 2005: *Fire Behavior Potential in Central Saskatchewan Under Predicted Climate Change*. PARC Summary Document 05-01, PARC (Prairie Adaptation Research Collaborative), Regina, Saskatchewan, Canada, 12 pp.
- Potter, C., S.A. Klooster, R. Myneni, V. Genovese, P. Tan, and V. Kumar,** 2003: Continental scale comparisons of terrestrial carbon sinks estimated from satellite data and ecosystem modeling 1982-98. *Global and Planetary Change*, **39(3-4)**, 201-213.
- Price, D.T., D.H. Halliwell, M.J. Apps, W.A. Kurz, and S.R. Curry,** 1997: Comprehensive assessment of carbon stocks and fluxes in a Boreal-Cordilleran forest management unit. *Canadian Journal of Forest Research*, **27(12)**, 2005-2016.
- Price, D.T., D.W. McKenney, P. Papadopol, T. Logan, and M.F. Hutchinson,** 2004: *High Resolution Future Scenario Climate Data for North America*. Proceedings of the American Meteorological Society 26th Conference on Agricultural and Forest Meteorology, Vancouver, British Columbia, Canada, 23-26 August 2004, 13 pp.
- Price, D.T., C.H. Peng, M.J. Apps, and D.H. Halliwell,** 1999: Simulating effects of climate change on boreal ecosystem carbon pools in central Canada. *Journal of Biogeography*, **26(6)**, 1237-1248.
- Proctor, P., L.S. Heath, P.C. Van Deusen, J.H. Gove, and J.E. Smith,** 2005: COLE: a web-based tool for interfacing with forest inventory data. In: *Proceedings of the Fourth Annual Forest Inventory and Analysis Symposium* [McRoberts, R.E., G.A. Reams, P.C. Van Deusen, W.H. McWilliams, C.J. Ciesewski (eds.)]. GTR-NC-252, U.S. Department of Agriculture, Forest Service. St. Paul, MN, 258 pp.
- Running, S.W., R.R. Nemani, F.A. Heinsch, M.S. Zhao, M. Reeves, and H. Hashimoto,** 2004: A continuous satellite-derived measure of global terrestrial primary production. *Bioscience*, **54(6)**, 547-560.
- Schimel, D., J. Melillo, H. Tian, A.D. McGuire, D. Kicklighter, T. Kittel, N. Rosenbloom, S. Running, P. Thornton, D. Ojima, W. Parton, R. Kelly, M. Sykes, R. Neilson, and B. Rizzo,** 2000: Contribution of increasing CO<sub>2</sub> and climate to carbon storage by ecosystems in the United States. *Science*, **287(5460)**, 2004-2006.
- Schoene, D. and M. Netto,** 2005: The Kyoto Protocol: what does it mean for forests and forestry? *Unasylva*, **222(56)**, 3-11.
- Secretaría de Medio Ambiente, Recursos Naturales y Pesca (SEMARNAP),** 1996: *Programa Forestal y de Suelo 1995-2000*. Poder ejecutivo Federal, SEMARNAP, México City, 79 pp.
- Skog, K.E. and G.A. Nicholson,** 1998: Carbon cycling through wood products: the role of wood and paper products in carbon sequestration. *Forest Products Journal*, **48(7)**, 75-83. Available at <http://www.fpl.fs.fed.us/documents/pdf1998/skog98a.pdf>
- Smith, W.B., P.D. Miles, J.S. Vissage, and S.A. Pugh,** 2004: *Forest Resources of the United States*, 2002. General Technical Report NC-241, U.S. Department of Agriculture, Forest Service, North Central Research Station, St. Paul, MN, 137 pp.
- Smith, J.E. and L.S. Heath,** 2005: Land use change and forestry and related sections. In: *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2003*. Excerpted, EPA 430-R-05-003, U.S. Environmental Protection Agency. Available at <http://yosemite.epa.gov/oar/globalwarming.nsf/content/ResourceCenterPublicationsGHGEmissions.html>
- Smith, J.E. and L.S. Heath,** 2000: Considerations for interpreting probabilistic estimates of uncertainty of forest carbon. In: *The Impact of Climate Change on America's Forests* [Joyce, L.A. and R. Birdsey (eds.)]. General Technical Report RMRS-GTR-59, U.S. Department of Agriculture, Forest Service, pp. 102-111.
- Smith, J.E., L.S. Heath, K.E. Skog, and R.A. Birdsey,** 2006: *Methods for Calculating Forest Ecosystem and Harvested Carbon with Standard Estimates for Forest Types of the United States*. General Technical Report NE-343 U.S. Department of Agriculture, Forest Service, Newtown Square, PA. 216 pp.
- Soto-Pinto, L., G. Jimenez-Ferrer, A.V. Guillen, B. de Jong Berghsma, and E. Esquivel-Bazan,** 2001: Experiencia agroforestal

- para la captura de carbono en comunidades indigenas de Mexico. *Revista Forestal Iberoamericana*, **1**, 44-50.
- Stavins, R.N.** and K.R. Richards, 2005: *The Cost of U.S. Forest-Based Carbon Sequestration*. The Pew Center on Global Climate Change, Arlington, VA, 40 pp. Available at <http://www.pewclimate.org>
- Torres, R.J.M.**, 2004: *Estudio de tendencias y perspectivas del sector forestal en América Latina al año 2020*. Informe Nacional México, FAO. Available at [http://www.fao.org/documents/show\\_cdr.asp?url\\_file=/docrep/006/j2215s/j2215s11.htm](http://www.fao.org/documents/show_cdr.asp?url_file=/docrep/006/j2215s/j2215s11.htm)
- Totten, M.**, 1999: *Getting it Right: Emerging Markets for Storing Carbon in Forests*. World Resources Institute, Washington, DC, 49 pp.
- Turner, D.P.**, W.D. Ritts, W.B. Cohen, S.T. Gower, S.W. Running, M. Zhao, M.H. Costa, A. Kirschbaum, J. Ham, S. Saleska, and D.E. Ahl, 2006: Evaluation of MODIS NPP and GPP products across multiple biomes. *Remote Sensing of Environment*, **102(3-4)**, 282-292.
- U.S. Climate Change Science Program**, 2003: *Strategic Plan for the Climate Change Science Program*. Washington, DC. Available at <http://www.climatescience.gov/Library/stratplan2003/default.htm>
- Van Tuyl, S.**, B.E. Law, D.P. Turner, and A.I. Gitelman, 2005: Variability in net primary production and carbon storage across Oregon forests - an assessment integrating data from forest inventories, intensive sites, and remote sensing. *Forest Ecology and Management*, **209(3)**, 273-291.
- VEMAP Members** (Melillo, J. M., J. Borchers, J. Chaney, H. Fisher, S. Fox, A. Haxeltine, A. Janetos, D.W. Kicklighter, T.G.F. Kittel, A.D. McGuire, R. McKeown, R. Neilson, R. Nemani, D.S. Ojima, T. Painter, Y. Pan, W.J. Parton, L. Pierce, L. Pitelka, C. Prentice, B. Rizzo, N.A. Rosenbloom, S. Running, D.S. Schimel, S. Sitch, .S. T.; Smith, I. Woodward, (VEMAP Members) 1995: Vegetation/ecosystem modeling and analysis project (VEMAP): comparing biogeography and biogeochemistry models in a continental-scale study of terrestrial ecosystem responses to climate change and CO<sub>2</sub> doubling. *Global Biogeochemical Cycles*, **9(4)**, 407-437.
- Volney, J.A.W.** and K. Hirsch, 2005: Disturbing forest disturbances. *Forestry Chronicle*, **81(5)**, 662-668.
- Weber, M.G.** and M.D. Flannigan, 1997: Canadian boreal forest ecosystem structure and function in a changing climate: impact on fire regimes. *Environmental Reviews*, **5(3-4)**, 145-166.
- Winrock International**, 2005: *Ecosystem Services*. Date accessed unknown. Available at <http://www.winrock.org/what/projects.cfm?BU=9086>
- Bockheim, J.G.** and C. Tarnocai, 1998: Recognition of cryoturbation for classifying permafrost-affected soils. *Geoderma*, **81(3-4)**, 281-293.
- Brown, J.**, O.J. Ferrians, Jr., J.A. Heginbottom, and E.S. Melnikov, 1997: *Circum-Arctic Map of Permafrost and Ground Ice Conditions*. 1:10 million scale map, International Permafrost Association.
- Burgess, M.M.** and C. Tarnocai, 1997: Peatlands in the discontinuous permafrost zone along the Norman Wells pipeline, Canada. In: *Proceedings of the International Symposium on Physics, Chemistry, and Ecology of Seasonally Frozen Soils* Fairbanks, Alaska, June 10-12, 1997 [Iskandr, I.K., E.A. Wright, J.K. Radke, B.S. Sharratt, P.H. Groeneveld, and L.D. Hinzman (eds.)]. Special Report 97-10, U.S. Army Cold Regions Research and Engineering Laboratory, Hanover, NH, pp. 417-424.
- Christensen, T.**, 1991: Arctic and sub-Arctic soil emissions: possible implications for global climate change. *Polar Record*, **27**, 205-210.
- Cryosol Working Group**, 2001: *Northern and Mid Latitudes Soil Database, Version 1*. National Soil Database, Research Branch, Agriculture and Agri-Food Canada, Ottawa, Ontario, Canada.
- Davidson, E.A.** and I.A. Janssens, 2006: Temperature sensitivity of soil carbon decomposition and feedbacks to climate change. *Nature*, **440(7081)**, 165-173.
- Driscoll, C.T.**, J. Holsapple, C.L. Schofield, and R. Munson, 1998: The chemistry and transport of mercury in a small wetland in the Adirondack region of New York, USA. *Biogeochemistry*, **40(2/3)**, 137-146.
- Ecoregions Working Group**, 1989: *Ecoclimatic Regions of Canada, First Approximation*. Ecoregions Working Group of the Canada Committee on Ecological Land Classification, Ecological Land Classification Series, No. 23, Sustainable Development Branch, Canadian Wildlife Service, Conservation and Protection, Environment Canada, Ottawa, Ontario, Canada, 119 pp.
- Gorham, E.**, 1988: Canada's peatlands: their importance for the global carbon cycle and possible effect of "greenhouse" climate warming. *Transactions of the Royal Society of Canada, Series V*, **3**, 21-23.
- Hengeveld, H.G.**, 2000: Projections for Canada's climate future: a discussion of recent simulations with the Canadian Global Climate Model. In: *Climate Change Digest*. CCD 00-01, Special Edition, 27 pp. Last accessed April 6, 2005, Meteorological Service of Canada, Environment Canada, Downsview, Ontario, Canada. Available at [http://www.msc.ec.gc.ca/saib/climate/docs/ccd\\_00-01.pdf](http://www.msc.ec.gc.ca/saib/climate/docs/ccd_00-01.pdf)
- Jorgenson, M.T.**, C.H. Racine, J.C. Walters, and T.E. Osterkamp, 2001: Permafrost degradation and ecological changes associated with a warming climate in central Alaska. *Climatic Change*, **48(4)**, 551-579.
- Jorgenson, M.Y.** and J. Brown, 2005: Classification of the Alaskan Beaufort Sea Coast and estimation of carbon and sediment inputs from coastal erosion. *Geo-marine Letters*, **25(2-3)**, 69-80.

## CHAPTER 12 REFERENCES

- AMAP** (Arctic Monitoring and Assessment Programme), 2004: *AMAP Assessment 2002: Persistent Organic Pollutants in the Arctic*. AMAP, Oslo, Norway, 310 pp.
- Bailey, R.** and C.T. Cushwa, 1981: *Ecoregions of North America*. 1:12 million scale map, U.S. Forest Service and U.S. Fish and Wildlife Service.

- Kettles, I.M.** and C. Tarnocai, 1999: Development of a model for estimating the sensitivity of Canadian peatlands to climate warming. *Géographie physique et Quaternaire*, **53(3)**, 323-338.
- Kokelj, S.V.** and C.R. Burn, 2005: Geochemistry of the active layer and near-surface permafrost, Mackenzie delta region, Northwest Territories, Canada. *Canadian Journal of Earth Sciences*, **42(1)**, 37-48.
- Kuhry, G.P.**, 1994: The role of fire in the development of Sphagnum-dominated peatlands in the western boreal Canada. *Journal of Ecology*, **82(4)**, 899-910.
- Lacelle, B.**, C. Tarnocai, S. Waltman, J. Kimble, N. Bliss, B. Worstell, F. Orozco-Chavez, and B. Jakobsen, 2000: *North American Soil Organic Carbon Map*. 1:10 million scale map, Agriculture and Agri-Food Canada, USDA, USGS, INEGI and Institute of Geography, University of Copenhagen.
- Libilik, L.K.**, T.R. Moore, J.L. Bubier, and S.D. Robinson, 1997: Methane emissions from wetlands in the zone of discontinuous permafrost: Fort Simpson, Northwest Territories, Canada. *Global Biogeochemical Cycles*, **11(4)**, 485-494.
- Mackay, J.R.**, 1980: The origin of hummocks, western Arctic coast, Canada. *Canadian Journal of Earth Sciences*, **13(7)**, 889-897.
- Melillo, J.M.**, T.V. Callaghan, F.I. Woodward, E. Salati, and S.K. Sinha, 1990: Climate change - effects on ecosystems (Chapter 10). In: *Climate Change: The IPCC Scientific Assessment* [Houghton, J.T., G.J. Jenkins, and J.J. Ephraums (eds.)]. Cambridge University Press, New York, pp. 283-310.
- Michaelson, G.J.**, C.L. Ping, and J.M. Kimble, 1996: Carbon storage and distribution in tundra soils of Arctic Alaska, U.S.A. *Arctic and Alpine Research*, **28(4)**, 414-424.
- Moore, T.R.**, 1997: Dissolved organic carbon: sources, sinks, and fluxes and role in the soil carbon cycle (Chapter 19). In: *Soil Processes and the Carbon Cycle* [Lal, R., J.M. Kimble, R.F. Follett, and B.A. Stewart (eds.)]. *Advances in Soil Science*, CRC Press, Boca Raton, FL, pp. 281-292.
- Moore, T.R.** and N.T. Roulet, 1995: Methane emissions from Canadian peatlands (Chapter 12). In: *Soils and Global Change* [Lal, R., J. Kimble, E. Levine, and B.A. Stewart (eds.)]. CRC Lewis Publishers, Boca Raton, FL, pp. 153-164.
- National Wetlands Working Group**, 1988: *Wetlands of Canada*. Ecological Land Classification Series No. 24, Sustainable Development Branch, Environment Canada, Ottawa, Ontario, and Polyscience Publications, Inc., Montreal, Quebec. 452 pp.
- Oechel, W.** and G.L. Vourlitis, 1994: The effect of climate change on land-atmosphere feedbacks in arctic tundra regions. *Trends in Ecology and Evolution*, **9(9)**, 324-329.
- Peterson, R.A.** and W.B. Krantz, 2003: A mechanism for differential frost heave and its implications for patterned-ground formation. *Journal of Glaciology*, **49(164)**, 69-80.
- Ping, C.L.**, T. Jorgenson, J. Brown, L.D. Guo, and Y. Shur, 2006: Coastal erosion across northern Alaska and community action. *Arctic Forum 2006*, Arctic Research Consortium of the U.S. (ARCUS), Fairbanks, AK, p 53.
- Reader, R.J.** and J.M. Stewart, 1972: The relationship between net primary production and accumulation for a peatland in southeastern Manitoba. *Ecology*, **53(6)**, 1024-1037.
- Ritchie, J.C.**, 1987: *Postglacial Vegetation of Canada*. Cambridge University Press, New York, 178 pp.
- Robinson, S.D.** and T.R. Moore, 1999: Carbon and peat accumulation over the past 1200 years in a landscape with discontinuous permafrost, northwestern Canada. *Global Biogeochemical Cycles*, **13(2)**, 591-601.
- Robinson, S.D.** and T.R. Moore, 2000: The influence of permafrost and fire upon carbon accumulation in High Boreal peatlands, Northwest Territories, Canada. *Arctic, Antarctic, and Alpine Research*, **32(2)**, 155-166.
- Robinson, S.D.**, M.R. Turetsky, I.M. Kettles, and R.K. Wieder, 2003: Permafrost and peatland carbon sink capacity with increasing latitude. In: *Permafrost* [Phillips, M., S.M. Springer, and L.U. Arenson (eds.)]. Proceedings of the 8th International Conference on Permafrost, 21-25 July 2003, Zurich, Switzerland, **2**, 965-970.
- Soil Carbon Database Working Group**, 1993: *Soil Carbon for Canadian Soils*. Digital database, Centre for Land and Biological Resources Research, Research Branch, Agriculture and Agri-Food Canada, Ottawa, Ontario, Canada, 137 pp.
- Suchanek, T.H.**, P.J. Richerson, J.R. Flanders, D.C. Nelson, L.H. Mullen, L.L. Brester, and J.C. Becker, 2000: Monitoring interannual variability reveals sources of mercury contamination in Clear Lake, CA. *Environmental Monitoring and Assessment*, **64(1)**, 299-310.
- Tarnocai, C.**, 1998: The amount of organic carbon in various soil orders and ecological provinces in Canada. In: *Soil Processes and the Carbon Cycle* [Lal, R., J.M. Kimble, R.L.F. Follett, and B.A. Stewart (eds.)]. *Advances in Soil Science*, CRC Press, New York, 81-92.
- Tarnocai, C.**, 1999: The effect of climate warming on the carbon balance of Cryosols in Canada. In: *Cryosols and Cryogenic Environments* [Tarnocai, C., R. King, and S. Smith (eds.)]. Special issue of *Permafrost and Periglacial Processes*, **10(3)**, 251-263.
- Tarnocai, C.**, 2000: Carbon pools in soils of the Arctic, Subarctic and Boreal regions of Canada. In: *Global Climate Change and Cold Regions Ecosystems* [Lal, R., J.M. Kimble, and B.A. Stewart (eds.)]. *Advances in Soil Science*, Lewis Publishers, Boca Raton, FL, pp. 91-103.
- Tarnocai, C.**, 2006: The effect of climate change on carbon in Canadian peatlands. *Global and Planetary Change*, **53(3)**, 222-232.
- Tarnocai, C.**, I.M. Kettles, and B. Lacelle, 2005: *Peatlands of Canada Database*. Digital database, Agriculture and Agri-Food Canada, Research Branch, Ottawa, Ontario, Canada.
- Trumbore, S.E.** and J.W. Harden, 1997: Accumulation and turnover of carbon in organic and mineral soils of the BOREAS (Boreal Ecosystem-Atmosphere Study) northern study area. *Journal of Geophysical Research*, **102(D24)**, 28817-28830.

- Turetsky, M.R., B.D. Amiro, E. Bosch, and J.S. Bhatti, 2004:** Historical burn area in western Canadian peatlands and its relationship to fire weather indices. *Global Biogeochemical Cycles*, **18**, GB4014, doi:10.1029/2004GB002222.
- Vandenberghe, J., 1992:** Cryoturbations: a sediment structural analysis. *Permafrost and Periglacial Processes*, **4**, 121–135.
- Van Everdingen, R. (ed.), 1998 revised May 2005:** *Multi-language Glossary of Permafrost and Related Ground-Ice Terms*. National Snow and Ice Data Center/World Data Center for Glaciology, Boulder, CO, 90 pp., Available at <http://nsidc.org/fgdc/glossary>
- Van Vliet-Lanoë, B., 1991:** Differential frost heave, load casting and convection: converging mechanisms; a discussion of the origin of cryoturbations. *Permafrost and Periglacial Processes*, **2**, 123–139.
- Vitt, D.H., L.A. Halsey, I.E. Bauer, and C. Campbell, 2000:** Spatial and temporal trends in carbon storage of peatlands of continental western Canada through the Holocene. *Canadian Journal of Earth Sciences*, **37(5)**, 683–693.
- Walker, D.A., V.E. Romanovsky, W.B. Krantz, C.L. Ping, R.A. Peterson, M.K. Raynolds, H.E. Epstein, J.G. Jia, and D.C. Wirth, 2002:** *Biocomplexity of Frost Boil Ecosystem on the Arctic Slope, Alaska*. ARCUS 14th Annual Meeting and Arctic Forum 2002, Arlington, VA. Available at [http://siempre.arcus.org/4DACTION/wi\\_pos\\_displayAbstract/5/391](http://siempre.arcus.org/4DACTION/wi_pos_displayAbstract/5/391)
- Zoltai, S.C., C. Tarnocai, and W.W. Pettapiece, 1978:** *Age of Cryoturbated Organic Material in Earth Hummocks From the Canadian Arctic*. Proceedings of the Third International Conference on Permafrost, Edmonton, Alberta, Canada, pp. 325–331.
- Zoltai, S.C., S. Taylor, J.K. Jeglum, G.F. Mills, and J.D. Johnson, 1988:** Wetlands of Boreal Canada. In: *Wetlands of Canada*. Ecological Land Classification Series, No. 24, National Wetlands Working Group, Sustainable Development Branch, Environment Canada, Ottawa, Canada, and Polyscience Publications, Montreal, Quebec, Canada, pp. 97–154.
- Bourne, J., 2000:** Louisiana's vanishing wetlands: going, going... *Science*, **289(5486)**, 1860–1863.
- Bridgham, S.D., C.L. Ping, J.L. Richardson, and K. Updegraff, 2000:** Soils of northern peatlands: Histosols and Gelisols. In: *Wetland Soils: Genesis, Hydrology, Landscapes, and Classification* [Richardson, J.L. and M.J. Vepraskas (eds.)]. CRC Press, Boca Raton, FL, pp. 343–370.
- Bridgham, S.D., K. Updegraff, and J. Pastor, 1998:** Carbon, nitrogen, and phosphorus mineralization in northern wetlands. *Ecology*, **79(5)**, 1545–1561.
- Cao, M., K. Gregson, and S. Marshall, 1998:** Global methane emission from wetlands and its sensitivity to climate change. *Atmospheric Environment*, **32(19)**, 3293–3299.
- Chappellaz, J., T. Blunert, D. Raynaud, J.M. Barnola, J. Schwander, and B. Stauffer, 1993:** Synchronous changes in atmospheric CH<sub>4</sub> and Greenland climate between 40 and 8 kyr B.P. *Nature*, **366(6454)**, 443–445.
- Cleary, J., N.T. Roulet, and T.R. Moore, 2005:** Greenhouse gas emissions from Canadian peat extraction, 1990–2000: a life-cycle analysis. *Ambio*, **34(6)**, 456–461.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe, 1979:** *Classification of Wetlands and Deepwater Habitats of the United States*. FWS/OBS-79/31, Fish and Wildlife Service, U.S. Department of the Interior, Washington, DC.
- Dahl, T.E., 2000:** *Status and Trends of Wetlands in the Contiguous United States, 1986 to 1997*. U.S. Department of the Interior, Fish and Wildlife Service, Washington, DC.
- Day Jr., J.W., G.P. Shafer, L.D. Britsch, D.J. Reed, S.R. Hawes, and D. Cahoon, 2000:** Pattern and process of land loss in the Mississippi Delta: a spatial and temporal analysis of wetland habitat change. *Estuaries*, **23(4)**, 425–438.
- Day Jr., J.W., G.P. Shaffer, D.J. Reed, D.R. Cahoon, L.D. Britsch, and S.R. Hawes, 2001:** Patterns and processes of wetland loss in coastal Louisiana are complex: a reply to Turner 2001. estimating the indirect effects of hydrologic change on wetland loss: if the earth is curved, then how would we know it? *Estuaries*, **24(4)**, 647–651.
- Dugan, P. (ed.), 1993:** *Wetlands in Danger—A World Conservation Atlas*. Oxford University Press, New York, 192 pp.
- Ehhalt, D., M. Prather, F. Dentener, E. Dlugokencky, E. Holland, I. Isaksen, J. Katima, V. Kirchhoff, P. Matson, P. Midgley, and M. Wang, 2001:** Atmospheric chemistry and greenhouse gases. In: *Climate Change 2001: The Scientific Basis*. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change [Houghton, J.T., Y. Ding, D.J. Griggs, M. Noguer, P.J. van der Linden, X. Dai, K. Maskell, and C.A. Johnson (eds.)]. Cambridge University Press, Cambridge, United Kingdom, pp. 239–287.
- Euliss, N.H., R.A. Gleason, A. Olness, R.L. McDougal, H.R. Murkin, R.D. Robarts, R.A. Bourbonniere, and B.G. Warner, 2006:** North American prairie wetlands are important nonforested land-based carbon storage sites. *Science of the Total Environment*, **361(1-3)**, 179–188.

## CHAPTER 13 REFERENCES

- Armentano, T.B. and E.S. Menges, 1986:** Patterns of change in the carbon balance of organic soil-wetlands of the temperate zone. *Journal of Ecology*, **74(3)**, 755–774.
- Aselmann, I. and P.J. Crutzen, 1989:** Global distribution of natural freshwater wetlands and rice paddies, their net primary productivity, seasonality and possible methane emissions. *Journal of Atmospheric Chemistry*, **8(4)**, 307–359.
- Barker, J.R., G.A. Baumgardner, D.P. Turner, and J.J. Lee, 1996:** Carbon dynamics of the conservation and wetland reserve program. *Journal of Soil and Water Conservation*, **51(4)**, 340–346.
- Bartlett, K.B. and R.C. Harriss, 1993:** Review and assessment of methane emissions from wetlands. *Chemosphere*, **26(1-4)**, 261–320.
- Blunier, T., J. Chappellaz, J. Schwander, B. Stauffer, and D. Raynaud, 1995:** Variations in atmospheric methane concentration during the Holocene epoch. *Nature*, **374(6517)**, 46–49.

- Finlayson, C.M., N.C. Davidson, A.G. Spiers, and N.J. Stevenson, 1999:** Global wetland inventory—current status and future priorities. *Marine Freshwater Research*, **50**, 717–727.
- Fletcher, S.E.M., P.P. Tans, L.M. Bruhwiler, J.B. Miller, and M. Heimann, 2004a:** CH<sub>4</sub> sources estimated from atmospheric observations of CH<sub>4</sub> and its <sup>13</sup>C/<sup>12</sup>C isotopic ratios: 1. inverse modeling of source processes. *Global Biogeochemical Cycles*, **18**, doi:10.1029/2004GB002223.
- Fletcher, S.E.M., P.P. Tans, L.M. Bruhwiler, J.B. Miller, and M. Heimann, 2004b:** CH<sub>4</sub> sources estimated from atmospheric observations of CH<sub>4</sub> and its <sup>13</sup>C/<sup>12</sup>C isotopic ratios: 2. inverse modeling of CH<sub>4</sub> fluxes from geographical regions. *Global Biogeochemical Cycles*, **18**, doi:10.1029/2004GB002224.
- Freeman, C., N. Fenner, N.J. Ostle, H. Kang, D.J. Dowrick, B. Reynolds, M.A. Lock, D. Sleep, S. Hughes, and J. Hudson, 2004:** Export of dissolved organic carbon from peatlands under elevated carbon dioxide levels. *Nature*, **430(6996)**, 195–198.
- Frolking, S., N. Roulet, and J. Fuglestvedt, 2006:** How northern peatlands influence the earth's radiative budget: sustained methane emission versus sustained carbon sequestration. *Journal of Geophysical Research-Biogeosciences*, **111**, G01008, doi:10.1029/2005JG000091.
- Frolking, S., N.T. Roulet, T.R. Moore, P.M. Lafleur, J.L. Bubier, and P.M. Crill, 2002:** Modeling seasonal to annual carbon balance of Mer Bleue Bog, Ontario, Canada. *Global Biogeochemical Cycles*, **16**, doi:10.1029/2001GB001457.
- Gauci, V., E. Matthews, N. Dise, B. Walter, D. Koch, G. Granberg, and M. Vile, 2004:** Sulfur pollution suppression of the wetland methane source in the 20th and 21st centuries. *Proceedings of the National Academy of Sciences*, **101(34)**, 12583–12587, doi:10.1073/pnas.0404412101.
- Gedney, N., P.M. Cox, and C. Huntingford, 2004:** Climate feedbacks from methane emissions. *Geophysical Research Letters*, **31**, L20503, doi:20510.21029/22004GL020919.
- Gorham, E., 1991:** Northern peatlands: Role in the carbon cycle and probable responses to climatic warming. *Ecological Applications*, **1(2)**, 182–195.
- Harden, J.W., J.M. Sharpe, W.J. Parton, D.S. Ojima, T.L. Fries, T.G. Huntington, and S.M. Dabney, 1999:** Dynamic replacement and loss of soil carbon on eroding cropland. *Global Biogeochemical Cycles*, **13(4)**, 885–901.
- Hines, M.E. and K.N. Duddleston, 2001:** Carbon flow to acetate and C<sub>1</sub> compounds in northern wetlands. *Geophysical Research Letters*, **28(22)**, 4251–4254.
- Hoosbeek, M.R., N. van Breeman, F. Berendse, P. Brosvernier, H. Vasander, and B. Wallén, 2001:** Limited effect of increased atmospheric CO<sub>2</sub> concentration on ombrotrophic bog vegetation. *New Phytologist*, **150(2)**, 459–463.
- Hoosbeek, M.R., M. Lukac, D. van Dam, D.L. Godbold, E.J. Velthorst, F.A. Biondi, A. Peressotti, M.F. Cotrufo, P. de Angelis, and G. Scarascia-Mugnozza, 2004:** More new carbon in the mineral soil of a poplar plantation under Free Air Carbon Enrichment (POPFACE): Cause of increased priming effect? *Global Biogeochemical Cycles*, **18**, GB1040, doi:10.1029/2003GB002127.
- Joosten, H. and D. Clarke, 2002:** *Wise Use of Mires and Peatlands - Background Principles Including a Framework for Decision-Making*. International Mire Conservation Group and International Peat Society, Saarijärvi, Finland, 253 pp.
- Kearney, M.S., A.S. Rogers, J.R.G. Townshend, E. Rizzo, D. Stutzer, J.C. Stevenson, and K. Sundborg, 2002:** Landsat imagery shows decline of coastal marshes in Chesapeake and Delaware Bays. *EOS*, **83**, 173.
- Kearney, M.S. and J.C. Stevenson, 1991:** Island land loss and marsh vertical accretion rate evidence for historical sea-level changes in Chesapeake Bay. *Journal of Coastal Research*, **7**, 403–415.
- Keller, J.K., S.D. Bridgham, C.T. Chapin, and C.M. Iversen, 2005:** Limited effects of six years of fertilization on carbon mineralization dynamics in a Minnesota fen. *Soil Biology and Biochemistry*, **37(6)**, 1197–1204.
- Kim, H.Y., M. Lieffering, S. Miura, K. Kobayashi, and M. Okada, 2001:** Growth and nitrogen uptake of CO<sub>2</sub>-enriched rice under field conditions. *New Phytologist*, **150(2)**, 223–229.
- Lichter, J., S.H. Barron, C.E. Bevacqua, A.C. Finzi, K.F. Irving, E.A. Stemmler, and W.H. Schlesinger, 2005:** Soil carbon sequestration and turnover in a pine forest after six years of atmospheric CO<sub>2</sub> enrichment. *Ecology*, **86(7)**, 1835–1847.
- Lynch-Stewart, P., I. Kessel-Taylor, and C. Rubec, 1999:** *Wetlands and Government: Policy and Legislation for Wetland Conservation in Canada*. Sustaining Wetlands Issue Paper No. 1999-1, North American Wetlands Conservation Council (Canada), 57 pp.
- Maltby, E. and P. Immirzi, 1993:** Carbon dynamics in peatlands and other wetland soils, regional and global perspectives. *Chemosphere*, **27(6)**, 999–1023.
- Marsh, A.S., D.P. Rasse, B.G. Drake, and J.P. Megonigal, 2005:** Effect of elevated CO<sub>2</sub> on carbon pools and fluxes in a brackish marsh. *Estuaries*, **28(5)**, 694–704.
- Matthews, E. and I. Fung, 1987:** Methane emission from natural wetlands: global distribution, area, and environmental characteristics of sources. *Global Biogeochemical Cycles*, **1**, 61–86.
- Megonigal, J.P. and W.H. Schlesinger, 1997:** Enhanced CH<sub>4</sub> emissions from a wetland soil exposed to elevated CO<sub>2</sub>. *Biogeochemistry*, **37(1)**, 77–88.
- Megonigal, J.P., C.D. Vann, and A.A. Wolf, 2005:** Flooding constraints on tree (*Taxodium distichum*) and herb growth responses to elevated CO<sub>2</sub>. *Wetlands*, **25(2)**, 430–438.
- Mitra, S., R. Wassmann, and P.L.G. Vlek, 2005:** An appraisal of global wetland area and its organic carbon stock. *Current Science*, **88(1)**, 25–35.
- Moore, T.R., 1997:** Dissolved organic carbon: sources, sinks, and fluxes and role in the soil carbon cycle. In: *Soil Processes and the Carbon Cycle*. [Lal, R., J.M. Kimble, R.F. Follett, and B.A. Stewart (eds.)]. Lewis Publishers, Boca Raton, FL, pp: 281–292.

- Moore**, T.R. and N.T. Roulet, 1995: Methane emissions from Canadian peatlands. In: *Soils and Global Change* [Lal, R., J. Kimble, E. Levine, and B. A. Stewart (eds.)]. Lewis Publishers, Boca Raton, FL, pp. 153–164.
- Moore**, T.R., N.T. Roulet, and J.M. Waddington, 1998: Uncertainty in predicting the effect of climatic change on the carbon cycling of Canadian peatlands. *Climatic Change*, **40**(2), 229–245.
- Moser**, M., C. Prentice, and S. Frazier, 1996: A global overview of wetland loss and degradation. In: *Proceedings of the 6th Meeting of the Conference of the Contracting Parties*, Brisbane, Australia, Papers, Technical Session B, Vol 10/12B, 19–27 March 1996, Ramsar Convention Bureau, Gland, Switzerland, 21–31.
- Najjar**, R.G., H.A. Walker, P.J. Anderson, E.J. Barron, R.J. Bord, J.R. Gibson, V.S. Kennedy, C.G. Knight, J.P. Megonigal, R.E. O’Conner, C.D. Polksky, N.P. Psuty, B.A. Richards, L.G. Sonrenson, E.M. Steele, and R.S. Swanson, 2000: The potential impacts of climate change on the mid-Atlantic coastal region. *Climate Research*, **14**(3), 219–233.
- NRC** (National Research Council), 1995: *Wetlands: Characteristics and Boundaries*. National Academy Press, Washington, DC, 307 pp.
- NRC** (National Research Council), 2001: *Compensating for Wetland Losses Under the Clean Water Act*. National Academy Press, Washington, DC, 322 pp.
- National Wetlands Working Group**, 1997: *The Canadian Wetland Classification System, Second Edition* [Warner, B.G. and C.D.A. Rubec (eds.)]. Wetlands Research Centre, University of Waterloo, Waterloo, Ontario, Canada, 68 pp.
- OECD** (Organization for Economic Co-operation and Development), 1996: *Guidelines for Aid Agencies for Improved Conservation and Sustainable Use of Tropical and Sub-tropical Wetlands*. OECD, Paris, France, 69 pp.
- Oechel**, W.C., S. Cowles, N. Grulke, S.J. Hastings, B. Lawrence, T. Prudhomme, G. Riechers, B. Strain, D. Tissue, and G. Vourlitis, 1994: Transient nature of CO<sub>2</sub> fertilization in arctic tundra. *Nature*, **371**(6497), 500–502.
- Petit**, J.R., J. Jouzel, D. Raynaud, N.I. Barkov, J.-M. Barnola, I. Basile, M. Bender, J. Chappellaz, M. Davis, G. Delaygue, M. Delmotte, V.M. Kotlyakov, M. Legrand, V.Y. Lipenkov, C. Lorius, L. Pepin, C. Ritz, E. Saltzman, and M. Steinenard, 1999: Climate and atmospheric history of the past 420,000 years from the Vostok ice core, Antarctica. *Nature*, **399**(6735), 429–436.
- Ramaswamy**, V., O. Boucher, J. Haigh, D. Hauglustaine, J. Haywood, G. Myhre, T. Nakajima, G.Y. Shi, and S. Solomon, 2001: Radiative forcing of climate change. In: *Climate Change 2001: The Scientific Basis*. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change [Houghton, J.T., Y. Ding, D.J. Griggs, M. Noguer, P.J. van der Linden, X. Dai, K. Maskell, and C.A. Johnson (eds.)]. Cambridge University Press, Cambridge, United Kingdom, pp. 349–416.
- Rasse**, D.P., G. Peresta, and B.G. Drake, 2005: Seventeen years of elevated CO<sub>2</sub> exposure in a Chesapeake Bay wetland: sustained but contrasting responses of plant growth and CO<sub>2</sub> uptake. *Global Change Biology*, **11**(3), 369–377.
- Roulet**, N.T., 2000: Peatlands, carbon storage, greenhouse gases, and the Kyoto Protocol: prospects and significance for Canada. *Wetlands*, **20**(4), 605–615.
- Rubec**, C., 1996: The status of peatland resources in Canada. In: *Global Peat Resources* [Lappalainen, E. (ed.)]. International Peat Society and Geological Survey of Finland, Jyskä, Finland, pp. 243–252.
- Smith**, S.V., W.H. Renwick, R.W. Buddeimer, and C.J. Crossland, 2001: Budgets of soil erosion and deposition for sediments and sedimentary organic carbon across the conterminous United States. *Global Biogeochemical Cycles*, **15**(3), 697–707.
- Stallard**, R.F., 1998: Terrestrial sedimentation and the carbon cycle: coupling weathering and erosion to carbon burial. *Global Biogeochemical Cycles*, **12**(2), 231–257.
- Strack**, M., J.M. Waddington, and E.S. Tuittila, 2004: Effect of water table drawdown on northern peatland methane dynamics: implications for climate change. *Global Biogeochemical Cycles*, **18**, GB4003, doi:10.1029/2003GB002209.
- Tissue**, D.T. and W.C. Oechel, 1987: Response of *Eriophorum vaginatum* to elevated CO<sub>2</sub> and temperature in the Alaskan tussock tundra. *Ecology*, **68**(2), 401–410.
- Turetsky**, M.R., B.D. Amiro, E. Bosch, and J.S. Bhatti, 2004: Historical burn area in western Canadian peatlands and its relationship to fire weather indices. *Global Biogeochemical Cycles*, **18**, GB4014, doi:10.1029/2004GB002222.
- Turner**, R.E., 1997: Wetland loss in the Northern Gulf of Mexico: multiple working hypotheses. *Estuaries*, **20**(1), 1–13.
- Updegraff**, K., S.D. Bridgman, J. Pastor, P. Weishampel, and C. Harth, 2001: Response of CO<sub>2</sub> and CH<sub>4</sub> emissions in peatlands to warming and water-table manipulation. *Ecological Applications*, **11**(2), 311–326.
- Vann**, C.D. and J.P. Megonigal, 2003: Elevated CO<sub>2</sub> and water depth regulation of methane emissions: comparison of woody and non-woody wetland plant species. *Biogeochemistry*, **63**(2), 117–134.
- Vile**, M.A., S.D. Bridgman, R.K. Wieder, and M. Novák, 2003: Atmospheric sulfur deposition alters pathways of gaseous carbon production in peatlands. *Global Biogeochemical Cycles*, **17**(2), 1058–1064.
- Wang**, J.S., J.A. Logan, M.B. McElroy, B.N. Duncan, I.A. Megrtskaia, and R.M. Yantosca, 2004: A 3-D model analysis of the slowdown and interannual variability in the methane growth rate from 1988 to 1997. *Global Biogeochemical Cycles*, **18**, GB3011, doi:10.1029/2003GB002180.
- Watson**, R.T., I.R. Noble, B. Bolin, N.H. Ravindranath, D.J. Verrando, and D.J. Dokken, 2000: *IPCC Special Report on Land Use, Land-Use Change and Forestry*. Cambridge University Press, Cambridge, United Kingdom, 377 pp.

- Whiting**, G.J. and J.P. Chanton, 1993: Primary production control of methane emissions from wetlands. *Nature*, **364**(6440), 794-795.
- Wylyntko**, D. (ed.), 1999: *Prairie Wetlands and Carbon Sequestration: Assessing Sinks Under the Kyoto Protocol*. Institute for Sustainable Development, Ducks Unlimited Canada, and Wetlands International, Winnipeg, Manitoba, Canada.
- Zedler**, J.B. and S. Kercher, 2005: Wetland resources: status, trends, ecosystem services, and restorability. *Annual Review of Environmental Resources*, **30**, 39-74.
- Zhuang**, Q., J.M. Melillo, D.W. Kicklighter, R.G. Prin, A.D. McGuire, P.A. Steudler, B. Felzer, and S. Hu, 2004: Methane fluxes between terrestrial ecosystems and the atmosphere at northern high latitudes during the past century: a retrospective analysis with a process-based biogeochemistry model. *Global Biogeochemical Cycles*, **18**, GB 3010, doi:3010.1029/2004GB002239.

## CHAPTER 14 REFERENCES

- Agarwal**, C., G.M. Green, J.M. Grove, T.P. Evans, and C.M. Schweik, 2000: *A Review and Assessment of Land-Use Change Models: Dynamics of Space, Time and Human Choice*. CIPEC Collaborative Report Series No. 1, Center for the Study of Institutions, Populations, and Environmental Change, Indiana University and the USDA Forest Service, 61 pp.
- Akbari**, H., 2002: Shade trees reduce building energy use and CO<sub>2</sub> emissions from power plants. *Environmental Pollution*, **116**(Supplement 1), S119-S126.
- Akbari**, H. and S. Konopacki, 2005: Calculating energy-saving potentials of heat-island reduction strategies. *Energy Policy*, **33**(6), 721-756.
- Akbari**, H., D.M. Kurn, S.E. Bretz, and J.W. Hanford, 1997: Peak power and cooling energy savings of shade trees. *Energy and Buildings*, **25**(2), 139-148.
- Akbari**, H. and H. Taha, 1992: The impact of trees and white surfaces on residential heating and cooling energy use in four Canadian cities. *Energy*, **17**(2), 141-149.
- Aliq**, R.J., J.D. Kline, and M. Lichtenstein, 2004: Urbanization on the U.S. landscape: Looking ahead in the 21st century. *Landscape and Urban Planning*, **69**(2-3), 219-234.
- Aliq**, R.J., A. Plantinga, S. Ahn, and J.D. Kline, 2003: *Land Use Changes Involving Forestry for the United States: 1952 to 1997, With Projections to 2050*. General Technical Report 587, USDA Forest Service, Pacific Northwest Research Station, Portland, OR, 92 pp.
- Anderson**, W.P., P.S. Kanaroglou, E.J. Miller, 1996: Urban form, energy and the environment: a review of issues, evidence and policy. *Urban Studies*, **33**(1), 7-35.
- Betsill**, M.M., 2001: Mitigating climate change in U.S. cities: opportunities and obstacles. *Local Environment*, **6**(4), 393-406.
- CEC** (Commission for Environmental Cooperation), 2001: *The North American Mosaic: A State of the Environment Report*. CEC, Montreal, Canada, 100 pp.
- CIESIN** (Center for International Earth Science Network), Columbia University, International Food Policy Research Institute (IPFRI), the World Bank, Centro Internacional de Agricultura Tropical (CIAT), 2004: *Global Rural-Urban Mapping Project (GRUMP): Urban Extents*. Last accessed 3 Dec 2005. Available at <http://sedac.ciesin.columbia.edu/gpw>
- Cifuentes**, L., V.H. Borja-Aburto, N. Gouveia, G. Thurston, and D.L. Davis, 2001: Assessing health benefits of urban air pollution reductions associated with climate change mitigation (2000-2020): Santiago, Sao Paulo, Mexico City, and New York City. *Environmental Health Perspectives*, **109**(4), 419-425.
- Decker**, E.H., S. Elliot, F.A. Smith, D.R. Blake, and F.S. Rowland, 2000: Energy and material flow through the urban ecosystem. *Annual Review of Energy and the Environment*, **25**, 685-740.
- Easterling**, W.E., C. Polksky, D.G. Goodin, M.W. Mayfield, W.A. Muraco, and B. Yarnal, 2003: Changing places and changing emissions: comparing local, state, and United States emissions. In: *Global Change and Local Places: Estimating, Understanding and Reducing Greenhouse Gases* [Association of American Geographers Global Change in Local Places Research Group (eds.)]. Cambridge University Press, Cambridge, United Kingdom, pp. 143-157.
- EPA** (U.S. Environmental Protection Agency), 2000: *Projecting Land-Use Change: A Summary of Models for Assessing the Effects of Community Growth and Change on Land-Use Patterns*. EPA/600/R-00/098, Washington, DC, 142 pp.
- Ewing**, R., R. Pendall, and D. Chen, 2003: Measuring sprawl and its transportation impacts. *Transportation Research Record*, **1831**, 175-183.
- Folke**, C., A. Jansson, J. Larsson, and R. Costanza, 1997: Ecosystem appropriation by cities. *Ambio*, **26**, 167-172.
- Golubiewski**, N.E., 2006: Urbanization transforms prairie carbon pools: effects of landscaping in Colorado's Front Range. *Ecological Applications*, **16**(2), 555-551.
- Gomez-Ibanez**, J.A., 1991: A global view of automobile dependence. *Journal of the American Planning Association*, **57**(3), 376-379.
- Gonzalez**, G.A., 2005: Urban sprawl, global warming and the limits of ecological modernisation. *Environmental Politics*, **14**(3), 344-362.
- Gordon**, P. and H.W. Richardson, 1989: Gasoline consumption and cities: a reply. *Journal of the American Planning Association*, **55**, 342-346.
- Grimm**, N.B., J.M. Grove, S.T.A. Pickett, and C.L. Redman, 2000: Integrated approaches to long-term studies of urban ecological systems. *Bioscience*, **50**(7), 571-584.
- Grimmond**, C.S.B., T.S. King, F.D. Cropley, D.J. Nowak, and C. Souch, 2002: Local-scale fluxes of carbon dioxide in urban environments: methodological challenges and results from Chicago. *Environmental Pollution*, **116**(Supplement 1), S243-S254.
- Grimmond**, C.S.B., J.A. Salmond, T.R. Oke, B. Offerle, and A. Lemonsu, 2004: Flux and turbulence measurements at a

- densely built-up site in Marseille: heat, mass (water and carbon dioxide), and momentum. *Journal of Geophysical Research-Atmospheres*, **109**, doi:10.1029/2004JD004936.
- Huang**, Y.J., H. Akbari, H. Taha, and H. Rosenfeld, 1987: The potential of vegetation in reducing summer cooling loads in residential buildings. *Journal of Climate and Applied Meteorology*, **26**(9), 1103-1116.
- Hunt**, J.D., D.S. Kriger, and E.J. Miller, 2005: Current operation urban land-use-transport modeling frameworks: a review. *Transport Reviews*, **25**(3), 329-376.
- ICLEI** (The International Council for Local Environmental Initiatives), 1993: *Cities for Climate Protection: An International Campaign to Reduce Urban Emissions of Greenhouse Gases*. Last accessed 30 Mar 2006. Available at <http://www.iclei.org/index.php?id=1651>
- ICLEI** (The International Council for Local Environmental Initiatives), 2000: *Best Practices for Climate Protection: A Local Government Guide*. ICLEI, Berkeley, CA.
- Imhoff**, M.L., L. Bounoua, R.S. DeFries, W.T. Lawrence, D. Stutzer, J.T. Compton, and T. Ricketts, 2004: The consequences of urban land transformations on net primary productivity in the United States. *Remote Sensing of the Environment*, **89**(4), 434-443.
- Ironmonger**, D.S., C.K. Aitken, and B. Erbas, 1995: Economies of scale in energy use in adult-only households. *Energy Economics*, **17**(4), 301-310.
- Jaccard**, M., L. Failing, and T. Berry, 1997: From equipment to infrastructure: community energy management and greenhouse gas emission reduction. *Energy Policy*, **25**(13), 1065-1074.
- Kaye**, J.P., I.C. Burke, A.R. Mosier, and J.P. Guerschman, 2004: Methane and nitrous oxide fluxes from urban soils to the atmosphere. *Ecological Applications*, **14**(4), 975-981.
- Kaye**, J.P., R.L. McCulley, and I.C. Burke, 2005: Carbon fluxes, nitrogen cycling, and soil microbial communities in adjacent urban, native and agricultural ecosystems. *Global Change Biology*, **11**(4), 575-587.
- Kenworthy**, J.R. and P.W.G. Newman, 1990: Cities and transport energy: lessons from a global survey. *Ekistics*, **34**, 258-268.
- Koerner**, B. and J Klopatek, 2002: Anthropogenic and natural CO<sub>2</sub> emission sources in an arid urban environment. *Environmental Pollution*, **116**(Supplement 1), S45-S51.
- Kousky**, C. and S.H. Schneider, 2003: Global climate policy: will cities lead the way? *Climate Policy*, **3**(4), 359-372.
- Lin**, J.C., C. Gerbig, S.C. Wofsy, A.E. Andrews, B.C. Daube, B.C. Grainger, B.B. Stephens, P.S. Bakwin, and D.Y. Hollinger, 2004: Measuring fluxes of trace gases at regional scales by Lagrangian observations: application to the CO<sub>2</sub> budget and rectification airborne (COBRA study). *Journal of Geophysical Research-Atmospheres*, **109**, doi:10.1029/2004JD004754.
- Liu**, J., G.C. Daily, P.R. Ehrlich, G.W. Luck, 2003: Effects of household dynamics on resource consumption and biodiversity. *Nature*, **421**(6922), 530-533.
- MacKellar**, F.L., W. Lutz, C. Prinz, and A. Goujon, 1995: Population, households, and CO<sub>2</sub> emissions. *Population and Development Review*, **21**(4), 849-865.
- McPherson**, E.G., J.R. Simpson, P.F. Peper, S.E. Maco, and Q. Xiao, 2005: Municipal forest benefits and costs in five U.S. cities. *Journal of Forestry*, **103**(8), 411-416.
- Mindali**, O., A. Raveh, and I. Saloman, 2004: Urban density and energy consumption: a new look at old statistics. *Transportation Research Record Part A*, **38**(2), 143-162.
- NAHB** (National Association of Home Builders), 2005: *Housing Facts, Figures and Trends.*, Washington, DC.
- Nemitz**, E., K. Hargreaves, A.G. McDonald, J.R. Dorsey, and D. Fowler, 2002: Micrometeorological measurements of the urban heat budget and CO<sub>2</sub> emissions on a city scale. *Environmental Science and Technology*, **36**(14), 3139-3146.
- Newman**, P.W.G., 1999: Sustainability and cities: extending the metabolism model. *Landscape and Urban Planning*, **44**(4), 219-226.
- Nowak**, D.J. and D.E. Crane, 2002: Carbon storage and sequestration by urban trees in the USA. *Environmental Pollution*, **116**(3), 381-389.
- Nowak**, D.J., J.T. Walton, J.F. Dwyer, L.G. Kaya, and S. Myeong, 2005: The increasing influence of urban environments on U.S. forest management. *Journal of Forestry*, **103**(8), 377-382.
- Oke**, T.R., 1989: The micrometeorology of the urban forest. *Philosophical Transactions of the Royal Society of London, Series B*, **324**(1223), 335-349.
- Pataki**, D.E., R.J. Alig, A.S. Fung, N.E. Golubiewski, C.A. Kennedy, E.G. McPherson, D.J. Nowak, R.V. Pouyat, and P. Romero Lankao, 2006a: Urban ecosystems and the North American carbon cycle. *Global Change Biology* **12**(11), 2092-2102.
- Pataki**, D.E., D.R. Bowling, and J.R. Ehleringer, 2003: The seasonal cycle of carbon dioxide and its isotopic composition in an urban atmosphere: anthropogenic and biogenic effects. *Journal of Geophysical Research-Atmospheres*, **108**(D23), 4735.
- Pataki**, D.E., D.R. Bowling, J.R. Ehleringer, and J.M. Zobitz, 2006b: High resolution monitoring of urban carbon dioxide sources. *Geophysical Research Letters*, **33**, L03813, doi:10.1029/2005GL024822.
- Pickett**, S.T.A., M.L. Cadenasso, J.M. Grove, C.H. Nilon, R.V. Pouyat, W.C. Zipperer, and R. Costanza, 2001: Urban ecological systems: linking terrestrial ecological, physical, and socio-economic components of metropolitan areas. *Annual Review of Ecology and Systematics*, **32**, 127-157.
- Pouyat**, R., P. Groffman, I. Yesilonis, and L. Hernandez, 2002: Soil carbon pools and fluxes in urban ecosystems. *Environmental Pollution*, **116**(Supplement 1), S107-S118.
- Pouyat**, R.V., I. Yesilonis, and D.J. Nowak, 2006: Carbon storage by urban soils in the USA. *Journal of Environmental Quality*, **35**(4), 1566-1575.
- Qian**, Y. and R.F. Follet, 2002: Assessing soil carbon sequestration in turfgrass systems using long-term soil testing data. *Agronomy Journal*, **94**(4), 930-935.

- Romero Lankao, P.**, H. Lopez, A. Rosas, G. Gunther, and Z. Correa, 2004: *Can Cities Reduce Global Warming?* Urban Development and the Carbon Cycle in Latin America. IAI, UAM-X, IHDP, GCP, Mexico City, 92 pp. Available at <http://www.globalcarbonproject.org/global/pdf/MeetingAgenda.pdf>
- Sahely, H.R.**, S. Dudding, and C.A. Kennedy, 2003: Estimating the urban metabolism of Canadian cities: Greater Toronto Area case study. *Canadian Journal of Civil Engineering*, **30**(2), 468-483.
- Soegaard, H.** and L. Moller-Jensen, 2003: Toward a spatial CO<sub>2</sub> budget of metropolitan region based on textural image classification and flux measurements. *Remote Sensing of the Environment*, **87**(2-3), 283-294.
- Taha, H.**, 1997: Urban climates and heat islands: albedo, evapotranspiration, and anthropogenic heat. *Energy and Buildings*, **25**(2), 99-103.
- United Nations**, 2002: *Demographic Yearbook*. Available at <http://unstats.un.org/unsd/demographic/products/dyb/default.htm>
- United Nations**, 2004: *World Urbanization Prospects: The 2003 Revision*. E.04.XIII.6, U.N. Dept. of Economic and Social Affairs, Population Division, New York, 323 pp.
- United Nations Habitat**, 2003: *Global Observatory Database*. Last accessed 10 Nov 2005. Available at <http://www.unchs.org/programmes/guo>
- Warren-Rhodes, K.** and A. Koenig, 2001: Ecosystem appropriation by Hong Kong and its implications for sustainable development. *Ecological Economics*, **39**(2), 347-359.
- West, J.J.**, P. Osnaya, I. Laguna, J. Martinez, and A. Fernandez, 2004: Co-control of urban air pollutants and greenhouse gases in Mexico City. *Environmental Science and Technology*, **38**(13), 3474-3481.
- Boehme, S.E.**, C.L. Sabine, and C.E. Reimers, 1998: CO<sub>2</sub> fluxes from a coastal transect: a time-series approach. *Marine Chemistry*, **63**(1-2), 49-67.
- Borges, A.V.**, 2005: Do we have enough pieces of the jigsaw to integrate CO<sub>2</sub> fluxes in the Coastal Ocean? *Estuaries*, **28**(1), 3-27.
- Borges, A.V.**, B. Delille, and M. Frankignoulle, 2005: Budgeting sinks and sources of CO<sub>2</sub> in the coastal ocean: diversity of ecosystems counts. *Geophysical Research Letters*, **32**(14), L14601, doi:10.1029/2005GL023053.
- Boyd P.W.**, A.J. Watson, C.S. Law, E.R. Abraham, T. Trull, R. Murdoch, D.C.E. Bakker, A.R. Bowie, K.O. Buesseler, H. Chang, M. Charette, P. Croat, K. Downing, R. Frew, M. Gall, M. Hadfield, J. Hall, M. Harvey, G. Jameson, J. LaRoche, M. Liddicoat, R. Ling, M.T. Maldonado, R.M. McKay, S. Nodder, S. Pickmere, R. Pridmore, S. Rintoul, K. Safi, P. Sutton, R. Strzepek, K. Tanneberger, S. Turner, A. Waite, and J. Zeldis, 2000: A mesoscale phytoplankton bloom in the polar Southern Ocean stimulated by iron fertilization. *Nature*, **407**(6805), 695-702.
- Brewer, P.G.**, 2003: Direct injection of carbon dioxide into the oceans. In: *The Carbon Dioxide Dilemma: Promising Technologies and Policies*. National Academies Press, pp. 43-51.
- Cai, W.J.**, 2003: Riverine inorganic carbon flux and rate of biological uptake in the Mississippi River plume. *Geophysical Research Letters*, **30**(2), 1032.
- Cai, W.-J.**, Z.A. Wang, and Y.C. Wang, 2003: The role of marsh-dominated heterotrophic continental margins in transport of CO<sub>2</sub> between the atmosphere, the land-sea interface and the oceans. *Geophysical Research Letters*, **30**(16), 1849, doi:10.1029/2003GL017633.
- Cai, W.J.** and M. Dai, 2004: Comment on enhanced open ocean storage of CO<sub>2</sub> from shelf sea pumping. *Science*, **306**(5701), 1477c.
- Chavez, F.P.**, P.G. Strutton, G.E. Friederich, R.A. Feely, G.C. Feldman, D.G. Foley, and M.J. McPhaden, 1999: Biological and chemical response of the equatorial Pacific Ocean to 1997-98 El Niño. *Science*, **286**(5447), 2126-2131.
- Chavez, F.P.**, J.T. Pennington, C.G. Castro, J.P. Ryan, R.M. Michisaki, B. Schlining, P. Walz, K.R. Buck, A. McFayden, and C.A. Collins, 2002: Biological and chemical consequences of the 1997-98 El Niño in central California waters. *Progress in Oceanography*, **54**(1-4), 205-232.
- Chavez, F.P.**, J. Ryan, S. Lluch-Cota, and M. Ñiquen C., 2003: From anchovies to sardines and back: multidecadal change in the Pacific Ocean. *Science*, **299**(5604), 217-221.
- Chisholm, S.W.**, P.G. Falkowski, and J. Cullen, 2001: Discrediting ocean fertilization. *Science*, **294**(5541), 309-310.
- Codispoti, L.A.** and G.E. Friederich, 1986: Variability in the inorganic carbon system over the southeastern Bering Sea shelf during the spring of 1980 and spring-summer 1981. *Continental Shelf Research*, **5**(1), 133-160.
- Coale, K.H.**, K.S. Johnson, F.P. Chavez, K.O. Buesseler, R.T. Barber, M.A. Brzezinski, W.P. Cochlan, F.J. Millero, P.G.

- Falkowski, J.E. Bauer, R.H. Wanninkhof, R.M. Kudela, M.A. Altabet, B.E. Hales, T. Takahashi, M.R. Landry, R.R. Bidigare, X. Wang, Z. Chase, P.G. Strutton, G.E. Friederich, M.Y. Gorbunov, V.P. Lance, A.K. Hilting, M.R. Hiscock, M. Demarest, W.T. Hiscock, K.F. Sullivan, S.J. Tanner, R.M. Gordon, C.N. Hunter, V.A. Elrod, S.E. Fitzwater, J.L. Jones, S. Tozzi, M. Koblizek, A.E. Roberts, J. Herndon, J. Brewster, N. Ladizinsky, G. Smith, D. Cooper, D. Timothy, S.L. Brown, K.E. Selph, C.C. Sheridan, B.S. Twining, and Z.I. Johnson, 2004: Southern Ocean iron enrichment experiment: carbon cycling in high- and low-Si waters. *Science*, **304**(5669), 408-414.
- DeGrandpre**, M.D., T.R. Hammar, D.W.R. Wallace, and C.D. Wirick, 1997: Simultaneous mooring-based measurements of seawater CO<sub>2</sub> and O<sub>2</sub> off Cape Hatteras, North Carolina. *Limnology and Oceanography*, **42**(1), 21-28.
- DeGrandpre**, M.D., G.J. Olbu, C.M. Beatty, and T.R. Hammar, 2002: Air-sea CO<sub>2</sub> fluxes on the U.S. Middle Atlantic Bight. *Deep-Sea Research II*, **49**(20), 4355-4367.
- Doney**, S.C., R. Anderson, J. Bishop, K. Caldeira, C. Carlson, M.E. Carr, R. Feely, M. Hood, C. Hopkinson, R. Jahnke, D. Karl, J. Kleypas, C. Lee, R. Letelier, C. McClain, C. Sabine, J. Sarmiento, B. Stephens, and R. Weller, 2004: *Ocean Carbon and Climate Change (OCCC): An Implementation Strategy for U.S. Ocean Carbon Cycle Science*. UCAR, Boulder, CO, 108 pp.
- Ducklow**, H.W. and S.L. McCallister, 2004: The biogeochemistry of carbon dioxide in the coastal oceans. In: *The Sea*, Vol. 13 [Robinson, A.R. and K.H. Brink (eds.)]. John Wiley & Sons, New York, pp. 269-315.
- Feely**, R.A., J. Boutin, C.E. Coasca, Y. Dandonneau, J. Etcheto, H. Inoue, M. Ishii, C. LeQuere, D.J. Mackey, M. McPhaden, N. Metzl, A. Poisson, and R. Wanninkhof, 2002: Seasonal and interannual variability of CO<sub>2</sub> in the equatorial Pacific. *Deep-Sea Research II*, **49**(13-14), 2443-2469.
- Feely**, R.A., T. Takahashi, R. Wanninkhof, M.J. McPhaden, C.E. Cosca, S.C. Sutherland, and M.E. Carr, 2006: Decadal variability of the air-sea CO<sub>2</sub> fluxes in the equatorial Pacific Ocean. *Journal of Geophysical Research*, **111**, C07S03, doi:10.1029/2005jc003129.
- Friederich**, G.E., P.G. Brewer, R. Herlein, and F.P. Chavez, 1995: Measurement of sea surface partial pressure of CO<sub>2</sub> from a moored buoy. *Deep-Sea Research I*, **42**(7), 1175-1186.
- Friederich**, G., P. Walz, M. Burczynski, and F.P. Chavez, 2002: Inorganic carbon in the central California upwelling system during the 1997-1999 El Niño -La Niña Event. *Progress in Oceanography*, **54**(1-4), 185-204.
- Gattuso**, J.M., M. Frankignoulle, and R. Wollast, 1998: Carbon and carbonate metabolism in coastal aquatic ecosystem. *Annual Review of Ecology and Systematics*, **29**, 405-434.
- Gervais**, F., U. Riebesell, and M.Y. Gorbunov, 2002: Changes in primary productivity and chlorophyll: a in response to iron fertilization in the Southern Polar Frontal Zone. *Limnology and Oceanography*, **47**(5), 1324.
- Gruber**, N. and J.L. Sarmiento, 2002: Large-scale biogeochemical-physical interactions in elemental cycles. In: *The Sea*, Vol. 12 [Robinson, A.R., J. McCarthy, and B.J. Rothschild (eds.)]. John Wiley & Sons, New York, pp. 337-399.
- Hales**, B. and T. Takahashi, 2004: High-resolution biogeochemical investigation of the Ross Sea, Antarctica, during the AESOPS (U. S. JGOFS) Program. *Global Biogeochemical Cycles*, **18**(3), GB3006, doi:10.1029/2003GB002165.
- Hales**, B., T. Takahashi, and L. Bandstra, 2005: Atmospheric CO<sub>2</sub> uptake by a coastal upwelling system. *Global Biogeochemical Cycles*, **19**, GB1009, doi:10.1029/2004GB002295.
- Hare**, S.R. and N.J. Mantua, 2000: Empirical evidence for North Pacific regime shifts in 1977 and 1989. *Progress in Oceanography*, **47**(1), 103-145.
- Hedges**, J.I., R.G. Keil, and R. Benner, 1997: What happens to terrestrial organic matter in the ocean? *Organic Geochemistry*, **27**(5-6), 195-212.
- Keeling**, R.F. and H. Garcia, 2002: The change in oceanic O<sub>2</sub> inventory associated with recent global warming. *Proceedings of the National Academy of Sciences*, **99**(12), 7848-7853.
- Kleypas**, J.A., R.A. Feely, V.J. Fabry, C. Langdon, C.L. Sabine, and L. Robbins, 2006: *Impacts of ocean acidification on coral reefs and other marine calcifiers: A guide for future research*. Report of a workshop held 18-20, April, 2005, St. Petersburg, FL Sponsored by NSF, NOAA and USGS, 88 pp. Available at <http://www.issue.icar.edu/florida/>
- Körtzinger**, A., 2003: A significant CO<sub>2</sub> sink in the tropical Atlantic Ocean associated with the Amazon river plume. *Geophysical Research Letters*, **30**, 2287, doi:10.1029/2003GL018841.
- Liu**, K.K., K. Iseki, and S.-Y. Chao, 2000: Continental margin carbon fluxes. In: *The Changing Ocean Carbon Cycle* [Hansen, R., H.W. Ducklow, and J.G. Field (eds.)]. Cambridge University Press, Cambridge, United Kingdom, pp. 187-239.
- Lohrenz**, S.E., M.J. Dagg, and T.E. Whitledge, 1999: Nutrients, irradiance, and mixing as factors regulating primary production in coastal waters impacted by the Mississippi River plume. *Continental Shelf Research*, **19**(9), 1113-1141.
- Martin**, J.H., 1990: Glacial-interglacial CO<sub>2</sub> change: the iron hypothesis. *Paleoceanography*, **5**(1), 1-13.
- Millero**, F.J., W.T. Hiscock, F. Huang, M. Roche, and J.-Z. Zhang, 2001: Seasonal variation of the carbonate system in Florida Bay. *Bulletin of Marine Science*, **68**(1), 101-123.
- Muller-Karger**, F.E., R. Varela, R. Thunell, R. Luerssen, C. Hu, and J. J. Walsh, 2005. The importance of continental margins in the global carbon cycle. *Geophysical Research Letters*, **32**, L01602, doi:10.1029/2004GL021346.
- Park**, P.K., L.I. Gordon, and S. Alvarez-Borrego, 1974: The carbon dioxide system of the Bering Sea. In: *Oceanography of the Bering Sea* [Hood, D.W. (ed.)]. Occasional Publication No. 2, Institute of Marine Science, University of Alaska, Fairbanks, AK, 623 pp.
- Patra**, P.K., S. Maksyutov, M. Ishizawa, T. Nakazawa, T. Takahashi, and J. Ukita, 2005: Interannual and decadal changes in the sea-air CO<sub>2</sub> flux from atmospheric CO<sub>2</sub> inverse modeling.

- Global Biogeochemical Cycles*, **19**, GB4013, doi:10.1029/2004GB002257.
- Pennington**, J.T., C.G. Castro, C.A. Collins, W.W. Evans IV, G.E. Friederich, R.P. Michisaki, and F.P. Chavez: *A Carbon Budget for the Northern and Central California Coastal Upwelling System*. Continental Margins Task Team, The Synthesis Book, Chapter 2.2, California Current System, Springer-Verlag, New York (in press), 32 mss. pp.
- Quay**, P., R. Sommerup, T. Westby, J. Sutsman, and A. McNichol, 2003: Changes in the  $^{13}\text{C}/^{12}\text{C}$  of dissolved inorganic carbon in the ocean as a tracer of anthropogenic  $\text{CO}_2$  uptake. *Global Biogeochemical Cycles*, **17**(1), doi:10.1029/2001GB001817.
- Sabine**, C.L., R.A. Feely, N. Gruber, R.M. Key, K. Lee, J.L. Bullister, R. Wanninkhof, C.S. Wong, D.W.R. Wallace, B. Tilbrook, F.J. Millero, T.H. Peng, A. Kozyr, T. Ono, and A.F. Rios, 2004a: The oceanic sink for anthropogenic  $\text{CO}_2$ . *Science*, **305**(5682), 367-371.
- Sarmiento**, J.L. and Gruber, N., 2006: *Ocean Biogeochemical Dynamics*, Princeton University Press, Princeton, NJ, pp. 503.
- Sarmiento**, J.L. and E.T. Sundquist, 1992: Revised budget for the oceanic uptake of anthropogenic carbon dioxide. *Nature*, **356**(6370), 589-593.
- Sarmiento**, J.L., P. Monfray, E. Maier-Reimer, O. Aumont, R.J. Murnane, and J.C. Orr, 2000: Sea-air  $\text{CO}_2$  fluxes and carbon transport: a comparison of three ocean general circulation models. *Global Biogeochemical Cycles*, **14**(4), 1267-1282.
- Simpson**, J.J., 1985: Air-sea exchange of carbon dioxide and oxygen induced by phytoplankton: methods and interpretation. In: *Mapping Strategies in Chemical Oceanography* [Zirino, A. (ed.)]. American Chemical Society, Washington, DC, pp. 409-450.
- Smith**, S.V. and J.T. Hollibaugh, 1993: Coastal metabolism and the oceanic organic carbon balance. *Review of Geophysics*, **31**(1), 75-89.
- Takahashi**, T., S.C. Sutherland, C. Sweeney, A. Poisson, N. Metzl, B. Tilbrook, N. Bates, R. Wanninkhof, R.A. Feely, C. Sabine, J. Olafsson, and Y. Nojiri, 2002: Global sea-air  $\text{CO}_2$  flux based on climatological surface ocean  $\text{pCO}_2$ , and seasonal biological and temperature effects. *Deep-Sea Research II*, **49**(9-10), 1601-1622.
- Takahashi**, T., S.C. Sutherland, R.A. Feely, and C. Cosca, 2003: Decadal variation of the surface water  $\text{pCO}_2$  in the western and central Equatorial Pacific. *Science*, **302**(5646), 852-856.
- Thomas**, H., Y. Bozec, K. Elkayal, and H.J.W. De Baar, 2004: Enhanced open ocean storage of  $\text{CO}_2$  from shelf sea pumping. *Science*, **304**(5673), 1005-1008.
- Tsunogai**, S., S. Watanabe, and T. Sato, 1999: Is there a “continental shelf pump” for the absorption of atmospheric  $\text{CO}_2$ ? *Tellus B*, **5**(3), 701-712.
- van Geen**, A., R.K. Takesue, J. Goddard, T. Takahashi, J.A. Barth, and R.L. Smith, 2000: Carbon and nutrient dynamics during upwelling off Cape Blanco, Oregon. *Deep-Sea Research II*, **49**(20), 4369-4385.
- Wanninkhof**, R., 1992: Relationship between wind speed and gas exchange. *Journal of Geophysical Research*, **97**(C5), 7373-7382.
- Ware**, D.M. and R.D. Thomson, 2005: Bottom-up ecosystem trophic dynamics determine fish production in the Northeast Pacific. *Science*, **308**(5726), 1280-1284.

## APPENDIX A REFERENCES

- Birdsey**, R.A. and L.S. Heath, 1995: Carbon changes in U.S. forests. In: *Productivity of America's Forests and Climate Change* [Joyce, L.A. (ed.)]. General Technical Report RM-GTR-271, U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO, pp. 56-70.
- Birdsey**, R.A. and G.M. Lewis, 2003: Current and historical trends in use, management, and disturbance of U.S. forestlands. In: *The Potential of U.S. Forest Soils to Sequester Carbon and Mitigate the Greenhouse Effect* [Kimbler, J.M., L.S. Heath, and R.A. Birdsey (eds.)]. CRC Press LLC, New York, pp. 15-33.
- Bradley**, B.A., R.A. Houghton, J.F. Mustard, and S.P. Hamburg, 2006: Invasive grass reduces aboveground carbon stocks in shrublands of the Western US. *Global Change Biology*, **12**(10), 1815-1822.
- Cairns**, M.A., P.K. Haggerty, R. Alvarez, B.H.J. De Jong, and I. Olmsted, 2000: Tropical Mexico's recent land-use change: a region's contribution to the global carbon cycle. *Ecological Applications*, **10**(5), 1426-1441.
- Caspersen**, J.P., S.W. Pacala, J.C. Jenkins, G.C. Hurtt, P.R. Moorcroft, and R.A. Birdsey, 2000: Contributions of land-use history to carbon accumulation in U.S. forests. *Science*, **290**(5494), 1148-1151.
- Environment Canada**, 2005: *Canada's Greenhouse Gas Inventory 1990-2003: Initial Submission*. Greenhouse Gas Division, Environment Canada, Ottawa, Ontario, Canada. Available at [http://unfccc.int/national\\_reports/annex\\_i\\_ghg\\_inventories/national\\_inventories\\_submissions/items/2761.php](http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/2761.php)
- Houghton**, R.A., J.L. Hackler, and K.T. Lawrence, 1999: The U.S. carbon budget: contributions from land-use change. *Science*, **285**(5427), 574-578.
- Houghton**, R.A. and J.L. Hackler, 2000: Changes in terrestrial carbon storage in the United States. 1. The roles of agriculture and forestry. *Global Ecology and Biogeography*, **9**(2), 125-144.
- Houghton**, R.A., J.L. Hackler, and K.T. Lawrence, 2000: Changes in terrestrial carbon storage in the United States. 2. The role of fire and fire management. *Global Ecology and Biogeography*, **9**(2), 145-170.
- Hurtt**, G.C., S.W. Pacala, P.R. Moorcroft, J. Caspersen, E. Sheviakova, R.A. Houghton, and B. Moore III, 2002: Projecting the future of the U.S. carbon sink. *Proceedings of the National Academy of Sciences*, **99**(3), 1389-1394.
- Masera**, O.R., M.J. Ordonez, and R. Dirzo, 1997: Carbon emissions from Mexican forests: current situation and long-term scenarios. *Climatic Change*, **35**(3), 265-295.

- Pacala, S.W., G.C. Hurtt, D. Baker, P. Peylin, R.A. Houghton, R.A. Birdsey, L. Heath, E.T. Sundquist, R.F. Stallard, P. Ciais, P. Moorcroft, J.P. Caspersen, E. Shevliakova, B. Moore, G. Kohlmaier, E. Holland, M. Gloor, M.E. Harmon, S.M. Fan, J.L. Sarmiento, C.L. Goodale, D. Schimel, and C.B. Field, 2001: Consistent land- and atmosphere-based U.S. carbon sink estimates. *Science*, **292(5525)**, 2316-2320.**
- Smith, W.B., P.D. Miles, J.S. Vissage, and S.A. Pugh, 2004: *Forest Resources of the United States, 2002*. General Technical Report NC-241, U.S. Department of Agriculture, Forest Service, St. Paul, MN, 137 pp.**
- APPENDIX B REFERENCES**
- Baldocchi, D., E. Falge, L.H. Gu, R. Olson, D. Hollinger, S. Running, P. Anthoni, C. Bernhofer, K. Davis, R. Evans, J. Fuentes, A. Goldstein, G. Katul, B. Law, X.H. Lee, Y. Malhi, T. Meyers, W. Munger, W. Oechel, K.T. Paw U, K. Pilegaard, H.P. Schmid, R. Valentini, S. Verma, T. Vesala, K. Wilson, and S. Wofsy, 2001: FLUXNET: a new tool to study the temporal and spatial variability of ecosystem-scale carbon dioxide, water vapor, and energy flux densities, *Bulletin of the American Meteorological Society*, **82(11)**, 2415-2434.**
- Barford, C.C., S.C. Wofsy, M.L. Goulden, J.W. Munger, E.H. Pyle, S.P. Urbanski, L. Hutyra, S.R. Saleska, D. Fitzjarrald, and K. Moore, 2001: Factors controlling long- and short-term sequestration of atmospheric CO<sub>2</sub> in a mid-latitude forest. *Science*, **294(5547)**, 1688-1691.**
- Canadell, J.G., H.A. Mooney, D.D. Baldocchi, J.A. Berry, J.R. Ehleringer, C.B. Field, S.T. Gower, D.Y. Hollinger, J.E. Hunt, R.B. Jackson, S.W. Running, G.R. Shaver, W. Steffen, S.E. Trumbore, R. Valentini, B.Y. Bond, 2000: Carbon metabolism of the terrestrial biosphere: a multitechnique approach for improved understanding. *Ecosystems*, **3(2)**, 115-130.**
- Cook, B.D., K.J. Davis, W. Wang, A. Desai, B.W. Berger, R.M. Teclaw, J.G. Martin, P.V. Bolstad, P.S. Bakwin, C. Yi, and W. Heilman, 2004: Carbon exchange and venting anomalies in an upland deciduous forest in northern Wisconsin, USA. *Agricultural and Forest Meteorology*, **126(3-4)**, 271-295.**
- Curtis, P.S., P.J. Hanson, P. Bolstad, C. Barford, J.C. Randolph, H.P. Schmid, and K.B. Wilson, 2002: Biometric and eddy-covariance based estimates of annual carbon storage in five eastern North American deciduous forests. *Agricultural and Forest Meteorology*, **113(1-4)**, 3-19.**
- Ehman, J.L., H.P. Schmid, C.S.B. Grimmond, J.C. Randolph, P.J. Hanson, C.A. Wayson, and F.D. Cropley, 2002: An initial intercomparison of micrometeorological and ecological inventory estimates of carbon exchange in a mid-latitude deciduous forest. *Global Change Biology*, **8(6)**, 575-589.**
- Gough, C.M., P.S. Curtis, J.G. Vogel, H.P. Schmid, and H.B. Su: Annual carbon storage from 1999 to 2003 in a Northern hardwood forest assessed using eddy-covariance and biometric methods. *Agricultural and Forest Meteorology* (in review).**
- Horst, T.W. and J.C. Weil, 1994: How far is far enough? The fetch requirements for micrometeorological measurement of surface fluxes. *Journal of Atmospheric and Oceanic Technology*, **11(4)**, 1018-1025.**
- Law, B.E., P.E. Thornton, J. Irvine, P.M. Anthoni, and S. Van Tuyl, 2001: Carbon storage and fluxes in ponderosa pine forests at different developmental stages. *Global Change Biology*, **7(7)**, 755-777.**
- Verma, S.B., A. Dobermann, K.G. Cassman, D.T. Walters, J.M. Knops, T.J. Arkebauer, A.E. Suyker, G.G. Burba, B. Amos, H.S. Yang, D. Ginting, K.G. Hubbard, A.A. Gitelson, and E.A. Walter-Shea, 2005: Annual carbon dioxide exchange in irrigated and rainfed maize-based agroecosystems. *Agricultural and Forest Meteorology*, **131(1-2)**, 77-96.**
- Wofsy, S.C., M.L. Goulden, J.W. Munger, S.-M. Fan, P.S. Bakwin, B.C. Daube, S.L. Bassow, and F.A. Bazzaz, 1993: Net exchange of CO<sub>2</sub> in a mid-latitude forest. *Science*, **260(5112)**, 1314-1317.**
- APPENDIX D REFERENCES**
- Amiro, B.D., A.G. Barr, T.A. Black, H. Iwashita, N. Kljun, J.H. McCaughey, K. Morgenstern, S. Murayama, Z. Nesic, A.L. Orchansky, and N. Saigusa, 2005: Carbon, energy and water fluxes at mature and disturbed forest sites, Saskatchewan, Canada. *Agricultural and Forest Meteorology*, **136(3-4)**, 237-251.**
- Arain, M.A. and N. Restrepo-Coupe, 2005: Net ecosystem production in an eastern white pine plantation in southern Canada. *Agricultural and Forest Meteorology*, **128(3-4)**, 223-241.**
- Chapin, F.S. III, G.M. Woodwell, J.T. Randerson, G.M. Lovett, E.B. Rastetter, D.D. Baldocchi, D.A. Clark, M.E. Harmon, D.S. Schimel, R. Valentini, C. Wirth, J.D. Aber, J.J. Cole, M.L. Goulden, J.W. Harden, M. Heimann, R.W. Howarth, P.A. Matson, A.D. McGuire, J.M. Melillo, H.A. Mooney, J.C. Neff, R.A. Houghton, M.L. Pace, M.G. Ryan, S.W. Running, O.E. Sala, W.H. Schlesinger, E. Schulze, 2006. Reconciling carbon-cycle concepts, terminology, and methodology. *Ecosystems* **9(7)**, 1041-1050.**
- Clark, K.L., H.L. Gholz, and M.S. Castro, 2004: Carbon dynamics along a chronosequence of slash pine plantations in north Florida. *Ecological Applications*, **14(4)**, 1154-1171.**
- Giardina, C.P., D. Binkley, M.G. Ryan, J.H. Fownes, and R.S. Senock, 2004: Belowground carbon cycling in a humid tropical forest decreases with fertilization. *Oecologia*, **139(4)**, 545-550.**
- Griffis, T.J., T.A. Black, K. Morgenstern, A.G. Barr, Z. Nesic, G.B. Drewitt, D. Gaumont-Guay, and J.H. McCaughey, 2003: Ecophysiological controls on the carbon balances of three southern boreal forests. *Agricultural and Forest Meteorology*, **117(1-2)**, 53-71.**
- Humphreys, E.R., T.A. Black, K. Morgenstern, Z. Li, and Z. Nesic, 2005: Net ecosystem production of a Douglas-fir stand for three years following clearcut harvesting. *Global Change Biology*, **11(3)**, 450-464.**
- Law, B.E., E. Falge, D.D. Baldocchi, P. Bakwin, P. Berbigier, K. Davis, A.J. Dolman, M. Falk, J.D. Fuentes, A. Goldstein, A. Granier, A. Grelle, D. Hollinger, I.A. Janssens, P. Jarvis,**

- N.O. Jensen, G. Katul, Y. Mahli, G. Matteucci, R. Monson, W. Munger, W. Oechel, R. Olson, K. Pilegaard, K.T. Paw, H. Thorleifsson, R. Valentini, S. Verma, T. Vesala, K. Wilson, and S. Wofsy, 2002: Environmental controls over carbon dioxide and water vapor exchange of terrestrial vegetation. *Agricultural and Forest Meteorology*, **113(1-2)**, 97-120.
- Lugo**, A.E., J.F. Colón, and F.N. Scatena, 1999: The Caribbean. In: *North American Terrestrial Vegetation* [Barbour, M.G. and W.D. Billings (eds.)]. Cambridge University Press, Cambridge, United Kingdom, 530 pp.
- Osher**, L.J., P.A. Matson, and R. Amundson, 2003: Effect of land use change on soil carbon in Hawaii. *Biogeochemistry*, **65(2)**, 213-232.
- Randerson**, J.T., F.S. Chapin, III, J.W. Hardin, J.C. Neff, and M.E. Harmon, 2002. Net ecosystem production: a comprehensive measure of net carbon accumulation by ecosystems. *Ecological Applications* **12(4)**: 937-947.

## APPENDIX E REFERENCES

- Chapin**, F.S. III, G.M. Woodwell, J.T. Randerson, G.M. Lovett, E.B. Rastetter, D.D. Baldocchi, D.A. Clark, M.E. Harmon, D.S. Schimel, R. Valentini, C. Wirth, J.D. Aber, J.J. Cole, M.L. Goulden, J.W. Harden, M. Heimann, R.W. Howarth, P.A. Matson, A.D. McGuire, J.M. Melillo, H.A. Mooney, J.C. Neff, R.A. Houghton, M.L. Pace, M.G. Ryan, S.W. Running, O.E. Sala, W.H. Schlesinger, E. D. Schulze, 2006. Reconciling carbon-cycle concepts, terminology, and methodology. *Ecosystems* **9**, 1041-1050.
- Fitzsimmons**, M.J., D.J. Pennock, and J. Thorpe, 2004: Effects of deforestation on ecosystem carbon densities in central Saskatchewan, Canada. *Forest Ecology and Management*, **188(1-3)**, 349-361.
- Harmon**, M.E., J.M. Harmon, W.K. Ferrell, and D. Brooks, 1996: Modeling carbon stores in Oregon and Washington forest products: 1900-1992. *Climatic Change*, **33(4)**, 521-550.
- Harmon**, M., 2001: Carbon sequestration in forests - addressing the scale question. *Journal of Forestry*, **99**, 24-29.
- Harmon**, M. and P. Marks, 2002: Effects of silvicultural practices on carbon stores in Douglas-fir-western hemlock forests in the Pacific Northwest, USA: results from a simulation model. *Canadian Journal of Forest Research*, **32(5)**, 863-877.
- Janisch**, J. and M. Harmon, 2002: Successional changes in live and dead wood carbon stores: implications for net ecosystem productivity. *Tree Physiology*, **22(2-3)**, 77-89.
- Jenkins**, J.C., D.C. Chojnacky, L.S. Heath, and R.A. Birdsey, 2003: National-scale biomass estimators for United States tree species. *Forest Science*, **49(1)**, 12-35.
- Peterson**, E.B., G.M. Bonnor, G.C. Robinson, and N.M. Peterson, 1999: *Carbon Sequestration Aspects of an Afforestation Program in Canada's Prairie Provinces*. Joint Forest Sector Table/Sinks Table, National Climate Change Process, Ottawa, Ontario, Canada. Available at [http://www.nccp.ca/NCCP/national\\_process/issues/sinks\\_e.html](http://www.nccp.ca/NCCP/national_process/issues/sinks_e.html)

**Pregitzer**, K.S. and E.S. Euskirchen, 2004: Carbon cycling and storage in world forests: biomes patterns related to forest age. *Global Change Biology*, **10(12)**, 2052-2077.

**Ryan**, M.G., D. Binkley, and J.H. Fownes, 1997: Age-related decline in forest productivity: pattern and process. *Advances in Ecological Research*, **27**, 213-262.

**Schulze**, E., J. Lloyd, F. Kelliher, C. Wirth, C. Rebmann, B. Luhker, M. Mund, A. Knohl, I. Milyukova, W. Schulze, W. Ziegler, A. Varlagin, A. Sogachev, R. Valentini, S. Dore, S. Grigoriev, O. Kolle, M. Panfyorov, N. Tchebakova, and N. Vygodskaya, 1999: Productivity of forests in the Eurosiberian boreal region and their potential to act as a carbon sink - a synthesis. *Global Change Biology*, **5(6)**, 703-722.

**Stainback**, G.A. and J.R.R. Alavalapati, 2005: Effects of carbon markets on the optimal management of slash pine (*Pinus elliottii*) plantations. *Southern Journal of Applied Forestry*, **29(1)**, 27-32.

**Stanturf**, J.A., R.C. Kellison, F.S. Broerman, and S.B. Jones, 2003: Productivity of southern pine plantations - where we are and how did we get here? *Journal of Forestry*, **101(3)**, 26-31.

**Woodwell**, G. and R. Whittaker, 1968: Primary production in terrestrial communities. *American Zoologist*, **8**, 19-30.

## APPENDIX F REFERENCES

- Alford**, D.P., R.D. Delaune, and C.W. Lindau, 1997: Methane flux from Mississippi River deltaic plain wetlands. *Biogeochemistry*, **37(3)**, 227-236.
- Armentano**, T.B. and E.S. Menges, 1986: Patterns of change in the carbon balance of organic soil-wetlands of the temperate zone. *Journal of Ecology*, **74(3)**, 755-774.
- Aselmann**, I. and P.J. Crutzen, 1989: Global distribution of natural freshwater wetlands and rice paddies, their net primary productivity, seasonality and possible methane emissions. *Journal of Atmospheric Chemistry*, **8(4)**, 307-359.
- Bartlett**, D.S., K.B. Bartlett, J.M. Hartman, R.C. Harriss, D.I. Sebacher, R. Pelletier-Travis, D.D. Dow, and D.P. Brannon, 1989: Methane emissions from the Florida Everglades: patterns of variability in a regional wetland ecosystem. *Global Biogeochemical Cycles*, **3(4)**, 363-374.
- Bartlett**, K.B., D.S. Bartlett, R.C. Harriss, and D.I. Sebacher, 1987: Methane emissions along a salt marsh salinity gradient. *Biogeochemistry*, **4(3)**, 183-202.
- Bartlett**, K.B. and R.C. Harriss, 1993: Review and assessment of methane emissions from wetlands. *Chemosphere*, **26(1-4)**, 261-320.
- Bartlett**, K.B., R.C. Harriss, and D.I. Sebacher, 1985: Methane flux from coastal salt marshes. *Journal of Geophysical Research*, **90(D3)**, 5710-5720.
- Batjes**, N.H., 1996: Total carbon and nitrogen in the soils of the world. *European Journal of Soil Science*, **47(2)**, 151-163.
- Birdsey**, R.A., 1992: *Carbon Storage and Accumulation in United States Forest Ecosystems*. General Technical Report WO-59, USDA Forest Service, Washington, DC.

- Bridgman**, S.D., C.-L. Ping, J.L. Richardson, and K. Updegraff, 2000: Soils of northern peatlands: Histosols and Gelisols. In: *Wetland Soils: Genesis, Hydrology, Landscapes, and Classification* [Richardson, J.L. and M.J. Vepraskas (eds.)]. CRC Press, Boca Raton, FL, pp. 343–370.
- Bridgman**, S.D., K. Updegraff, and J. Pastor, 1998: Carbon, nitrogen, and phosphorus mineralization in northern wetlands. *Ecology*, **79(5)**, 1545–1561.
- Brown**, M.J., G.M. Smith, and J. McCollum, 2001: *Wetland Forest Statistics for the South Atlantic States*. RB-SRS-062, Southern Research Station, U.S. Forest Service, Asheville, NC, 52 pp.
- Burke**, R.A., T.R. Barber, and W.M. Sackett, 1988: Methane flux and stable hydrogen and carbon isotope composition of sedimentary methane from the Florida Everglades. *Global Biogeochemical Cycles*, **2(4)**, 329–340.
- Carroll**, P.C. and P.M. Crill, 1997: Carbon balance of a temperate poor fen. *Global Biogeochemical Cycles*, **11(3)**, 349–356.
- Chanton**, J.P., G.J. Whiting, J.D. Happell, and G. Gerard, 1993: Contrasting rates and diurnal patterns of methane emission from emergent aquatic macrophytes. *Aquatic Botany*, **46(2)**, 111–128.
- Chanton**, J.P., G.J. Whiting, W.J. Showers, and P.M. Crill, 1992: Methane flux from *Peltandra virginica*: stable isotope tracing and chamber effects. *Global Biogeochemical Cycles*, **6(1)**, 15–31.
- Chimner**, R.A. and D.J. Cooper, 2003: Carbon dynamics of pristine and hydrologically modified fens in the southern Rocky Mountains. *Canadian Journal of Botany*, **81(5)**, 477–491.
- Chmura**, G.L., S.C. Anisfeld, D.R. Cahoon, and J.C. Lynch, 2003: Global carbon sequestration in tidal, saline wetland soils. *Global Biogeochemical Cycles*, **17(4)**, 1111, doi:10.1029/2002GB001917.
- Cleary**, J., N.T. Roulet, and T.R. Moore, 2005: Greenhouse gas emissions from Canadian peat extraction, 1990–2000: a life-cycle analysis. *Ambio*, **34(6)**, 456–461.
- Clymo**, R.S., J. Turunen, and K. Tolonen, 1998: Carbon accumulation in peatland. *Oikos*, **81(2)**, 368–388.
- Coles**, J.R.P. and J.B. Yavitt, 2004: Linking belowground carbon allocation to anaerobic CH<sub>4</sub> and CO<sub>2</sub> production in a forested peatland, New York State. *Geomicrobiology Journal*, **21(7)**, 445–454.
- Cowardin**, L.M., V. Carter, F.C. Golet, and E.T. LaRoe, 1979: *Classification of Wetlands and Deepwater Habitats of the United States*. FWS/OBS-79/31, Fish and Wildlife Service, U.S. Department of the Interior, Washington, DC, 131 pp.
- Craft**, C.B. and W.P. Casey, 2000: Sediment and nutrient accumulation in floodplain and depressional freshwater wetlands of Georgia, USA. *Wetlands*, **20(2)**, 323–332.
- Dahl**, T.E., 1990: *Wetland Losses in the United States 1970's to 1980's*. U.S. Department of the Interior, Fish and Wildlife Service, Washington, DC, 13 pp.
- Dahl**, T.E., 2000: *Status and Trends of Wetlands in the Conterminous United States, 1986 to 1997*. U.S. Department of the Interior, Fish and Wildlife Service, Washington, DC, 82 pp.
- Dahl**, T.E. and C.E. Johnson, 1991: *Status and Trends of Wetlands in the Conterminous United States, Mid-1970's to Mid-1980's*. U.S. Department of the Interior, Fish and Wildlife Service, Washington, DC, 22 pp.
- Davidson**, I., R. Vanderkam, and M. Padilla, 1999: Review of wetland inventory information in North America. In: *Global Review of Wetland Resources and Priorities for Wetland Inventory* [Finlayson, C.M. and A.G. Spiers (eds.)]. Supervising Scientist Report 144, Supervising Scientist, Canberra, Australia, 35 pp.
- DeLaune**, R.D., C.J. Smith, and W.H. Patrick Jr., 1983: Methane release from Gulf coast wetlands. *Tellus*, **35B(1)**, 8–15.
- Dise**, N., 1993: Methane emissions from Minnesota peatlands: spatial and seasonal variability. *Global Biogeochemical Cycles*, **7(1)**, 123–142.
- Dise**, N.B. and E.S. Verry, 2001: Suppression of peatland methane emission by cumulative sulfate deposition in simulated acid rain. *Biogeochemistry*, **53(2)**, 143–160.
- Ehhalt**, D., M. Prather, F. Dentener, E. Dlugokencky, E. Holland, I. Isaksen, J. Katima, V. Kirchhoff, P. Matson, P. Midgley, and M. Wang, 2001: Atmospheric chemistry and greenhouse gases. In: *Climate Change 2001: The Scientific Basis*. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change [Houghton, J.T., Y. Ding, D.J. Griggs, M. Noguer, P.J. van der Linden, X. Dai, K. Maskell, and C.A. Johnson (eds.)]. Cambridge University Press, Cambridge, United Kingdom, pp. 239–287.
- Eswaran**, H., E. Van Den Berg, and J. Kimble, 1995: Global soil carbon resources. In: *Soils and Global Change* [Lal, R., J. Kimble, E. Levine, and B.A. Stewart (eds.)]. Lewis Publishers, Boca Raton, FL, pp. 27–43.
- Euliss**, N.H., R.A. Gleason, A. Olness, R.L. McDougal, H.R. Murkin, R.D. Robarts, R.A. Bourbonniere, and B.G. Warner, 2006: North American prairie wetlands are important nonforested land-based carbon storage sites. *Science of the Total Environment*, **361(1-3)**, 179–188.
- FAO** (Food and Agriculture Organization of the United Nations), 1991: *The Digitized Soil Map of the World*. World Soil Resource Report 67, FAO, Rome, Italy.
- FAO-UNESCO** (Food and Agriculture Organization, United Nations Educational, Scientific and Cultural Organization), 1974: *Soil Map of the World*. 1:5,000,000 scale map, UNESCO, Paris, France.
- Field**, D.W., A.J. Reyer, P.V. Genovese, and B.D. Shearer, 1991: *Coastal Wetlands of the United States: An Accounting of a Valuable Natural Resource*. Strategic Assessment Branch, Ocean Assessments Division, Office of Oceanography and Marine Assessment, National Ocean Service, National Oceanic and Atmospheric Administration, Washington, DC, 59 pp.
- Frayer**, W.E., T.J. Monahan, D.C. Bowden, and F.A. Graybill, 1983: *Status and Trends of Wetlands and Deepwater Habitats in the Conterminous United States, 1950s to 1970s*. Department of Forest and Wood Sciences, Colorado State University, Fort Collins, CO, 31 pp.

- Frolking, S.** and P. Crill, 1994: Climate controls on temporal variability of methane flux from a poor fen in southeastern New Hampshire: measurement and modeling. *Global Biogeochemical Cycles*, **8(4)**, 385–397.
- Gorham, E.**, 1991: Northern peatlands: role in the carbon cycle and probable responses to climatic warming. *Ecological Applications*, **1(2)**, 182–195.
- Gunnison, D.**, R.L. Chen, and J.M. Brannon, 1983: Relationship of materials in flooded soils and sediments to the water-quality of reservoirs. 1. Oxygen-consumption rates. *Water Research*, **17(11)**, 1609–1617.
- Hall, J.V.**, W.E. Frayer, and B.O. Wilen, 1994: *Status of Alaska Wetlands*. U.S. Fish and Wildlife Service, Anchorage, Alaska, 32 pp.
- Halsey, L.A.**, D.H. Vitt, and L.D. Gignac, 2000: Sphagnum-dominated peatlands in North America since the last glacial maximum: their occurrence and extent. *The Bryologist*, **103(2)**, 334–352.
- Hanson, A.R.** and L. Calkins, 1996: *Wetlands of the Maritime Provinces: Revised Documentation for the Wetlands Inventory*. Technical Report No. 267, Canadian Wildlife Service, Atlantic Region, Sackville, New Brunswick, Canada, 67 pp.
- Happell, J.D.**, J.P. Chanton, G.J. Whiting, and W.J. Showers, 1993: Stable isotopes as tracers of methane dynamics in Everglades marshes with and without active populations of methane oxidizing bacteria. *Journal of Geophysical Research*, **98(D8)**, 14771–14782.
- Harden, J.W.**, J.M. Sharpe, W.J. Parton, D.S. Ojima, T.L. Fries, T.G. Huntington, and S.M. Dabney, 1999: Dynamic replacement and loss of soil carbon on eroding cropland. *Global Biogeochemical Cycles*, **13(4)**, 885–901.
- Harriss, R.C.** and D.I. Sebacher, 1981: Methane flux in forested freshwater swamps of the southeastern United States. *Geophysical Research Letters*, **8(9)**, 1002–1004.
- Harriss, R.C.**, D.I. Sebacher, K.B. Bartlett, D.S. Bartlett, and P.M. Crill, 1988: Sources of atmospheric methane in the south Florida environment. *Global Biogeochemical Cycles*, **2(3)**, 231–243.
- Harriss, R.C.**, D.I. Sebacher, and F.P. Day, Jr., 1982: Methane flux in the Great Dismal Swamp. *Nature*, **297(5868)**, 673–674.
- Johnston, C.A.**, 1991: Sediment and nutrient retention by freshwater wetlands: effects on surface water quality. *Critical Reviews in Environmental Control*, **21**, 491–565.
- Johnston, C.A.**, S.D. Bridgman, and J.P. Schubauer-Berigan, 2001: Nutrient dynamics in relation to geomorphology of riverine wetlands. *Soil Science Society of America Journal*, **65(2)**, 557–577.
- Joosten, H.** and D. Clarke, 2002: *Wise Use of Mires and Peatlands - Background Principles Including a Framework for Decision-Making*. International Mire Conservation Group and International Peat Society, Saarijärvi, Finland, 304 pp.
- Kelly, C.A.**, C.S. Martens, and W. Ussler III, 1995: Methane dynamics across a tidally flooded riverbank margin. *Limnology and Oceanography*, **40(6)**, 1112–1129.
- Kelly, C.A.**, J.W.M. Rudd, R.A. Bodaly, N.T. Roulet, V.L. St. Louis, A. Heyes, T.R. Moore, S. Schiff, R. Aravena, K.J. Scott, B. Dyck, R. Harris, B. Warner, and G. Edwards, 1997: Increase in fluxes of greenhouse gases and methyl mercury following flooding of an experimental reservoir. *Environmental Science & Technology*, **31(5)**, 1334–1344.
- Kim, J.**, S.B. Verma, and D.P. Billesbach, 1999: Seasonal variation in methane emission from a temperate Phragmites-dominated marsh: effect of growth stage and plant-mediated transport. *Global Change Biology*, **5(4)**, 433–440.
- King, G.M.** and W.J. Wiebe, 1978: Methane release from soils of a Georgia salt marsh. *Geochimica et Cosmochimica Acta*, **42(4)**, 343–348.
- Kivinen, E.** and P. Pakarinen, 1981: Geographical distribution of peat resources and major peatland complex types in the world. *Annales Academiae Scientiarum Fennicae, Series A*, **3(132)**, 1–28.
- Kristensen, E.**, S.I. Ahmed, and A.H. Devol, 1995: Aerobic and anaerobic decomposition of organic matter in marine sediment: Which is fastest? *Limnology and Oceanography*, **40(9)**, 1430–1437.
- Lansdown, J.**, P. Quay, and S. King, 1992: CH<sub>4</sub> production via CO<sub>2</sub> reduction in a temperate bog: a source of <sup>13</sup>C-depleted CH<sub>4</sub>. *Geochimica et Cosmochimica Acta*, **56(9)**, 3493–3503.
- Lappalainen, E.**, 1996: General review on world peatland and peat resources. In: *Global Peat Resources* [Lappalainen, E. (ed.)]. International Peat Society and Geological Survey of Finland, Jyskä, Finland, pp. 53–56.
- Lugo, A.E.** and S.C. Snedaker, 1974: The ecology of mangroves. *Annual Review of Ecology and Systematics*, **5**, 39–64.
- Maltby, E.** and P. Immirzi, 1993: Carbon dynamics in peatlands and other wetland soils, regional and global perspectives. *Chemosphere*, **27(6)**, 999–1023.
- Malterer, T.J.**, 1996: Peat resources of the United States. In: *Global Peat Resources* [Lappalainen, E. (ed.)]. International Peat Society and Geological Survey of Finland, Jyskä, Finland, pp. 253–260.
- Matthews, E.** and I. Fung, 1987: Methane emission from natural wetlands: global distribution, area, and environmental characteristics of sources. *Global Biogeochemical Cycles*, **1**, 61–86.
- Meade, R.H.**, T.R. Yuzyk, and T.J. Day, 1990: Movement and storage of sediments in rivers of the United States and Canada. In: *Surface Water Hydrology. The Geology of North America*, Vol. 0-1 [Wolman, M.G. and H.C. Riggs (eds.)]. Geological Society of America, Boulder, CO, pp. 255–280.
- Megonigal, J.P.** and W.H. Schlesinger, 2002: Methane-limited methanotrophy in tidal freshwater swamps. *Global Biogeochemical Cycles*, **16(4)**, 1088, doi:10.1029/2001GB001594.
- Mendelsohn, I.A.** and K.L. McKee, 2000: Saltmarshes and mangroves. In: *North American Terrestrial Vegetation* [Barbour, M.G. and W.D. Billings (eds.)]. Cambridge University Press, Cambridge, United Kingdom, pp. 501–536.
- Miller, D.N.**, W.C. Ghorse, and J.B. Yavitt, 1999: Seasonal patterns and controls on methane and carbon dioxide fluxes in

- forested swamp pools. *Geomicrobiology Journal*, **16(4)**, 325–331.
- Mitsch, W.J.** and J.G. Gosselink, 1993: *Wetlands*. Van Nostrand Reinhold, New York, 722 pp.
- Moore, T.R.** and N.T. Roulet, 1995: Methane emissions from Canadian peatlands. In: *Soils and Global Change* [Lal, R., J. Kimble, E. Levine, and B.A. Stewart (eds.)]. Lewis Publishers, Boca Raton, FL, pp. 153–164.
- Moore, T.R.**, N.T. Roulet, and J.M. Waddington, 1998: Uncertainty in predicting the effect of climatic change on the carbon cycling of Canadian peatlands. *Climatic Change*, **40(2)**, 229–245.
- Moser, M.**, C. Prentice, and S. Frazier, 1996: *A Global Overview of Wetland Loss and Degradation*. Proceeding of the 6th Meeting of the Conference of Contracting Parties, Brisbane, Australia, Papers, Technical Session B, /Vol 10/12B, 19-27 March 1996, Ramsar Convention Bureau, Gland, Switzerland, 21-31.
- Naiman, R.J.**, T. Manning, and C.A. Johnston, 1991: Beaver population fluctuations and tropospheric methane emissions in boreal wetlands. *Biogeochemistry*, **12(1)**, 1–15.
- National Wetlands Working Group**, 1988: *Wetlands of Canada*. Sustainable Development Branch, Environment Canada, Ottawa, Ontario, and Polyscience Publications Inc, Montreal, Quebec, 452 pp.
- Neff, J.C.**, W.D. Bowman, E.A. Holland, M.C. Fisk, and S.K. Schmidt, 1994: Fluxes of nitrous oxide and methane from nitrogen-amended soils in a Colorado alpine ecosystem. *Biogeochemistry*, **27(1)**, 23–33.
- Neubauer, S.C.**, W.D. Miller, and I.C. Anderson, 2000: Carbon cycling in a tidal freshwater marsh ecosystem: a carbon gas flux study. *Marine Ecology Progress Series*, **199**, 13–30.
- NRCS (Natural Resources Conservation Service)**, 1999: *Soil Taxonomy: A Basic System of Soil Classification for Making and Interpreting Soil Surveys, Second Edition*. NRCS, U.S. Department of Agriculture, Washington, DC, 869 pp.
- Odum, W.E.**, T.J. Smith, III, J.K. Hoover, and C.C. McIvor, 1984: *The Ecology of Tidal Freshwater Marshes of the United States East Coast: A Community Profile*. FWS/OBS-83/17, U.S. Fish and Wildlife Service, Washington, DC, 177 pp.
- Olmsted, I.**, 1993: Wetlands of Mexico. In: *Wetlands of the World* [Whigham, D.F., D. Dyklová, and S. Hejný (eds.)]. Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 637–677.
- Ovenden, L.**, 1990: Peat accumulation in northern wetlands. *Quaternary Research*, **33(3)**, 377–386.
- Pulliam, W.M.**, 1993: Carbon dioxide and methane exports from a southeastern floodplain swamp. *Ecological Monographs*, **63**, 29–53.
- Rieger, S.**, D.B. Schoepfoster, and C.E. Furbush, 1979: *Exploratory Soil Survey of Alaska*. U.S. Department of Agriculture Soil Conservation Service, Anchorage, Alaska, 213 pp.
- Robinson, S.D.** and T.R. Moore, 1999: Carbon and peat accumulation over the past 1200 years in a landscape with discontinuous permafrost, northwestern Canada. *Global Biogeochemical Cycles*, **13(2)**, 591–602.
- Rubec, C.**, 1996: The status of peatland resources in Canada. In: *Global Peat Resources* [Lappalainen, E. (ed.)]. International Peat Society and Geological Survey of Finland, Jyskä, Finland, pp. 243–252.
- Schipper, L.A.** and K.R. Reddy, 1994: Methane production and emissions from four reclaimed and pristine wetlands of southeastern United States. *Soil Science Society of America*, **58**, 1270–1275.
- Shannon, R.D.** and J.R. White, 1994: A three year study of controls on methane emissions from two Michigan peatlands. *Biogeochemistry*, **27(1)**, 35–60.
- Shurpali, N.J.** and S.B. Verma, 1998: Micrometeorological measurements of methane flux in a Minnesota peatland during two growing seasons. *Biogeochemistry*, **40(1)**, 1–15.
- Smith, L.K.** and W.M. Lewis Jr., 1992: Seasonality of methane emissions from five lakes and associated wetlands of the Colorado Rockies. *Global Biogeochemical Cycles*, **6(4)**, 323–338.
- Smith, S.V.**, W.H. Renwick, R.W. Buddemeier, and C.J. Crossland, 2001: Budgets of soil erosion and deposition for sediments and sedimentary organic carbon across the conterminous United States. *Global Biogeochemical Cycles*, **15(3)**, 697–707.
- Spalding, M.**, F. Blasco, and C. Field (eds.), 1997: *World Mangrove Atlas*. The International Society for Mangrove Ecosystems, Okinawa, Japan, 178 pp.
- Spiers, A.G.**, 1999: Review of international/continental wetland resources. In: *Global Review of Wetland Resources and Priorities for Wetland Inventory* [Finlayson, C.M. and A.G. Spiers (eds.)]. Supervising Scientist Report 144, Supervising Scientist, Canberra, Australia.
- Stallard, R.F.**, 1998: Terrestrial sedimentation and the carbon cycle: coupling weathering and erosion to carbon burial. *Global Biogeochemical Cycles*, **12(2)**, 231–257.
- Tarnocai, C.**, 1998: The amount of organic carbon in various soil orders and ecological provinces in Canada. In: *Soil Processes and the Carbon Cycle* [Lal, R., J.M. Kimble, R.F. Follett, and B.A. Stewart (eds.)]. CRC Press, Boca Raton, FL, pp. 81–92.
- Tarnocai, C.**, I.M. Kettles, and B. Lacelle, 2005: *Peatlands of Canada*. 1:6,500,000 scale map, Agriculture and Agri-Food Canada, Research Branch, Ottawa, Ontario, Canada.
- Tolonen, K.** and J. Turunen, 1996: Accumulation rates of carbon in mires in Finland and implications for climate change. *Holocene*, **6**, 171–178.
- Trimble, S.W.** and P. Crosson, 2000: Land use - US soil erosion rates - Myth and reality. *Science*, **289(5477)**, 248–250.
- Trumbore, S.E.** and J.W. Harden, 1997: Accumulation and turnover of carbon in organic and mineral soils of the BOREAS northern study area. *Journal of Geophysical Research*, **102(D24)**, 28817–28830.
- Turetsky, M.R.**, R.K. Wieder, L.A. Halsey, and D. Vitt, 2002: Current disturbance and the diminishing peatland carbon sink. *Geophysical Research Letters*, **29**, doi:10.1029/2001GL014000.
- Turunen, J.**, N.T. Roulet, and T.R. Moore, 2004: Nitrogen deposition and increased carbon accumulation in ombrotrophic peat-

- lands in eastern Canada. *Global Biogeochemical Cycles*, **18**, GB3002, doi:3010.1029/2003GB002154.
- Twilley**, R.R., R.H. Chen, and T. Hargis, 1992: Carbon sinks in mangroves and their implications to carbon budget of tropical coastal ecosystems. *Water, Air and Soil Pollution*, **64**(1), 265–288.
- Valiela**, I., J.L. Bowen, and J.K. York, 2001: Mangrove forests: one of the world's threatened major tropical environments. *BioScience*, **51**(10), 807–815.
- Vitt**, D.H., L.A. Halsey, I.E. Bauer, and C. Campbell, 2000: Spatial and temporal trends in carbon storage of peatlands of continental western Canada through the Holocene. *Canadian Journal of Earth Sciences*, **37**(5), 683–693.
- Vitt**, D.H., L.A. Halsey, and S.C. Zoltai, 1994: The bog landforms of continental western Canada in relation to climate and permafrost patterns. *Arctic and Alpine Research*, **26**(1), 1–13.
- Webb**, R.S. and T. Webb III, 1988: Rates of sediment accumulation in pollen cores from small lakes and mires of eastern North America. *Quaternary Research*, **30**(3), 284–297.
- WEC** (World Energy Council), 2001: *Survey of Energy Resources*. <http://www.worldenergy.org/wec-geis/publications/reports/ser/peat/peat.asp>
- Werner**, C., K. Davis, P. Bakwin, C. Yi, D. Hurst, and L. Lock, 2003: Regional-scale measurements of CH<sub>4</sub> exchange from a tall tower over a mixed temperate/boreal lowland and wetland forest. *Global Change Biology*, **9**(9), 1251–1261.
- West**, A.E., P.D. Brooks, M.C. Fisk, L.K. Smith, E.A. Holland, C.H. Jaeger III, S. Babcock, R.S. Lai, and S.K. Schmidt, 1999: Landscape patterns of CH<sub>4</sub> fluxes in an alpine tundra ecosystem. *Biogeochemistry*, **45**(3), 243–264.
- Wickland**, K.P., R.G. Striegl, S.K. Schmidt, and M.A. Mast, 1999: Methane flux in subalpine wetland and unsaturated soils in the southern Rocky Mountains. *Global Biogeochemical Cycles*, **13**(1), 101–113.
- Wilson**, J.O., P.M. Crill, K.B. Bartlett, D.I. Sebacher, R.C. Harriss, and R.L. Sass, 1989: Seasonal variation of methane emissions from a temperate swamp. *Biogeochemistry*, **8**(1), 55–71.
- Yavitt**, J.B., 1997: Methane and carbon dioxide dynamics in *Typha latifolia* (L.) wetlands in central New York state. *Wetlands*, **17**(3), 394–406.
- Yavitt**, J.B., G.E. Lang, and A.J. Sexstone, 1990: Methane fluxes in wetland and forest soils, beaver ponds, and low-order streams of a temperate forest ecosystem. *Journal of Geophysical Research*, **95**(D13), 22463–22474.
- Yavitt**, J.B., R.K. Wieder, and G.E. Lang, 1993: CO<sub>2</sub> and CH<sub>4</sub> dynamics of a *Sphagnum*-dominated peatland in West Virginia. *Global Biogeochemical Cycles*, **7**(2), 259–274.
- Zedler**, J.B. and S. Kercher, 2005: Wetland resources: status, trends, ecosystem services, and restorability. *Annual Review of Environmental Resources*, **30**, 39–74.

## APPENDIX G REFERENCES

**DaSilva**, A., C. Young, and S. Levitus, 1994: *Atlas of Surface Marine Data 1994, Vol. 1: Algorithms and Procedures*. NOAA Atlas NESDIS 6, U.S. Department of Commerce, Washington, DC, v6, 83pp.

**Wanninkhof**, R., 1992: Relationship between wind speed and gas exchange. *Journal of Geophysical Research*, **97**(C5), 7373–7382.

## PHOTOGRAPHY CREDITS

### Cover/Page/Table of Contents

Cover, table of contents, pg 95, Image for Chapter 9 (Aerial view), Grant Goodge, STG Inc., Asheville, N.C..

### Executive Summary

Page 1, (CP & L stacks), Grant Goodge, STG. Inc., Asheville, N.C.

Page 7, (Autumnal pond), Dave McGuirk, NOAA, NCDC, Asheville, N.C.

Page 13, (Power plant), Grant Goodge, STG. Inc., Asheville, N.C.

### Chapter 1

Page 19, (Nuclear power plant), Deborah Misch, STG Inc., Asheville, N.C.

### Chapter 2

Page 21 (Inversion), Grant Goodge, STG. Inc., Asheville, N.C.

Page 24 (Low visibility), Grant Goodge, STG. Inc., Asheville, N.C.

Page 25 (Aerial view), Grant Goodge, STG. Inc., Asheville, N.C.

Page 27, (Creek), Sara Veasey, NOAA, NCDC, Asheville, N.C.

### Chapter 3

Page 35, (Aerial view), Grant Goodge, STG. Inc., Asheville, N.C.

### Chapter 4

Page 39, (Palm Springs Wind Farm), Grant Goodge, STG. Inc., Asheville, N.C.

Page 46, (Aerial view Fontana Dam), Grant Goodge, STG. Inc., Asheville, N.C.

### Chapter 6

Page 67, (Plume smoke), Grant Goodge, STG. Inc., Asheville, N.C.

Page 70, (Coal fired plant), Grant Goodge, STG. Inc., Asheville, N.C.

### Chapter 7

Page 83, (Jet plane), Grant Goodge, STG. Inc., Asheville, N.C.

## **Chapter 8**

- Page 85, (Paper mill aerial), Grant Goodge, STG. Inc., Asheville,  
N.C.  
Page 89, (Clear cut aerial), Grant Goodge, STG. Inc., Asheville,  
N.C.

## **Chapter 9**

- Page 95, Chapter Heading, Aerial urban view, Grant Goodge,  
STG. Inc., Asheville, N.C.  
Page 95, (San Francisco, Calif.), Grant Goodge, STG. Inc., Ashe-  
ville, N.C.  
Page 96, 99, 102 (Manhattan, NY), Anne Waple, STG. Inc., Ashe-  
ville, N.C.

## **Chapter 11**

- Page 117, (Trees and contrails), Grant Goodge, STG. Inc., Ashe-  
ville, N.C.  
Page 121, (Damaged shrub), Deborah Misch, STG. Inc., Ashe-  
ville, N.C.  
Page 122, (Rockies and yellow flowers), Dave McGuirk, NOAA,  
NCDC, Asheville, N.C.

## **Chapter 12**

- Page 136, (Alaskan Pipeline), Grant Goodge, STG. Inc., Ashe-  
ville, N.C.

## **Chapter 13**

- Page 139, (Cattails, wetlands), Grant Goodge, STG. Inc., Ashe-  
ville, N.C.

## **Chapter 14**

- Page 152,153, (Aerial building and traffic), Grant Goodge, STG.  
Inc., Asheville, N.C.  
Page 154,155, (Urban trees), Sara Veasey, NOAA, NCDC, Ashe-  
ville, N.C.

## **Appendix A**

- Page 167, (Mountain waterfall), Dave McGuirk, NOAA, NCDC,  
Asheville, N.C.

## **Appendix F**

- Page 184, (Wetlands), Grant Goodge, STG. Inc., Asheville, N.C.



## Contact Information

Global Change Research Information Office  
c/o Climate Change Science Program Office  
1717 Pennsylvania Avenue, NW  
Suite 250  
Washington, DC 20006  
202-223-6262 (voice)  
202-223-3065 (fax)

The Climate Change Science Program incorporates the U.S. Global Change Research Program and the Climate Change Research Initiative.

To obtain a copy of this document, place an order at the Global Change Research Information Office (GCRIO) web site:

<http://www.gcrio.org/orders>

---

## Climate Change Science Program and the Subcommittee on Global Change Research

**William J. Brennan**, Chair  
Department of Commerce  
National Oceanic and Atmospheric Administration  
Acting Director, Climate Change Science Program

**Jack Kaye**, Vice Chair  
National Aeronautics and Space Administration

**Allen Dearry**  
Department of Health and Human Services

**Jerry Elwood**  
Department of Energy

**Mary Glackin**  
National Oceanic and Atmospheric Administration

**Patricia Gruber**  
Department of Defense

**William Hohenstein**  
Department of Agriculture

**Linda Lawson**  
Department of Transportation

**Mark Myers**  
U.S. Geological Survey

**Jarvis Moyers**  
National Science Foundation

**Patrick Neale**  
Smithsonian Institution

**Jacqueline Schafer**  
U.S. Agency for International Development

**Joel Scheraga**  
Environmental Protection Agency

**Harlan Watson**  
Department of State

## EXECUTIVE OFFICE AND OTHER LIAISONS

**Melissa Brandt**  
Office of Management and Budget

**Stephen Eule**  
Department of Energy  
Director, Climate Change Technology Program

**Katharine Gebbie**  
National Institute of Standards & Technology

**George Banks**  
Council on Environmental Quality

**Gene Whitney**  
Office of Science and Technology Policy



### U.S. Climate Change Science Program

1717 Pennsylvania Avenue, NW • Suite 250 • Washington, D.C. 20006 USA

1-202-223-6262 (voice) • 1-202-223-3065 (fax)

<http://www.climatescience.gov>

